

807/14  
2

# THE Pulse Watch:

VOL. II.

OR, AN  
ESSAY

To discover

The Causes of Diseases, and a rational  
Method of curing them by Feeling of  
the PULSE.

These Essays are added as an APPENDIX.

- I. An Essay to make a new *Sphygmologia*, by  
accommodating the *Chinese* and *European* Observations  
about the Pulse.
- II. An Inquiry into the Nature, Use, Causes and Diffe-  
rences of the Respirations, and the Prognostications  
which may be made by them in Diseases.
- III. A Letter concerning the Rupture in the Lungs,  
which is the Cause of the Asthma in Mankind, and of  
the Broken-Wind in Horses, and of the Croke in  
Hawks, with the palliative Cure of those several  
Diseases, and their Symptoms.

By Sir JOHN FLOYER, Knight.

Σφυγμοῦ ὅτιν ἀγχιόσι ἀφ' ἑαυτοῦ ἢ ἐν βάθει κεκρυμμένων, καὶ  
ἢ ἀφανῶν προσήτης, καὶ ἢ ἀδήλων ἐλεγχῶ, ἐν ἀρμονικῇ  
κινήσει, καὶ μαθητικῇ πληγῇ διάδεσιν ἀόρατον περιγροῶν.  
Galen's Definitions.

LONDON: Printed for J. Nicholson, at the *King's Arms* in *Little-  
Britain*; W. Taylor, at the *Ship*; and H. Clemens, at the *Half-  
Morn* in *St. Paul's Church-Yard*, MDCCX.





L.R.D.

---

To his GRACE  
THE  
Duke of Marlborough.

May it please your Grace,

**I** Presented the First Part of  
this Essay to Her Majesty  
Queen ANNE; and therefore  
think my self obliged to make the  
Dedication of this Second Part,  
to that Person who is most esteem-  
ed by Her, Your Grace, Her In-  
vincible General.

## The Dedication.

*The great and frequent Victories obtain'd by your Conduct of her Armies, have reviv'd the Old Esteem for the English Valour; and your Famous Battels at Blenheim, Ramillies, Oudenarde, and the late near Mons, may be preferr'd to the most glorious of our Ancestors.*

*Nor will Posterity be less oblig'd for those young Hero's, who in your Camp have learnt the Arts of Politicks, as well as those of War: Your Grace having not only taught them, by your own great Example, to Conquer in the Field, to take the strongest Forts, but to Negotiate Treaties of Alliance with their Friends, and to prescribe Terms of Peace to their Enemies.*

*Whilst*



## The Dedication.

*Whilst you sustain'd the Fatigue of many and long Campaigns Abroad, our Nation at Home enjoy'd a happy Peace, and the studious Part of it an intire Security for prosecuting their Studies.*

*The Professors of Physick ought in a particular manner to make the best Use of such an Opportunity, and apply themselves, with more than ordinary Diligence, to all the Arts of preserving Mens Lives; at such a time when so many brave Men, animated by your Example, do freely hazard themselves for the Safety of their Country, and the Happiness of the whole Christian World.*

*For*

## The Dedication.

*For my own part I have endeavour'd to make some Improvement in the Art of Feeling the PULSE, by Observations taken both from the Chinese and Old European Physicians.*

*Galen, in Europe, was the Founder of the Art of practising by the Pulse, by which he obtain'd the Favour of the Emperors, Marcus Aurelius Antoninus, and Lucius Verus, who were also the greatest Generals in his Age; and they dispensed with his Attendance in their Wars, that he might write his Books on this Subject.*

*Your Grace's celebrated Character, for Goodness and Humanity, makes me hope for your favourable Opinion of this Treatise;*  
*tho'*

The Dedication.

*tho' I must confess, to my great  
Confusion, that the Modern Au-  
thor falls as far short of the An-  
tient, as the English General  
surpasses the Romans.*

I am,

Your Grace's

Most Faithful and

Obedient Servant,

JOHN FLOYER.



## . E R A T A .

**P**Age 9. Line 30. Read *Disease*; p. 10. l. 14. dele *not*; p. 5. for *on*, r.  
*or*; p. 22. l. 2. *Pulses*; p. 25. l. 19. r. *Wine*; p. 30. l. 13. r. *Spirits*;  
p. 40. l. 13. r. *Evacuation* f. *Concoction*; p. 50. l. 13. r. *thus* f. *than*; l.  
16. r. *without*; p. 79. l. 24. r. *Vigors* are; p. 82. l. 2. r. *frequent* *De-*  
*clination*; p. 83. l. 30. r. *Asses Milk*; p. 88. l. 6. r. *int. is*; p. 93. l. 23.  
r. *Menses*; p. 109. l. 22. r. *Ligatures*; p. 110. l. 7. r. 14 *Days*; p. 113.  
l. 3. dele *and*; p. 114. l. 2. dele *drane*; p. 116. l. 5. r. *Fever*; l. 31. r.  
*fel Martis*; p. 117. l. 24. r. *Sourness*; l. 25. r. *Asses Milk*; p. 118. l.  
13 r. *acid*; p. 121. l. 29 r. *Moroseness*; p. 124. l. 31. f. *are* r. *and*; p.  
125. l. 5. r. *Humours*; p. 135. l. 32. r. *Brooktime*; p. 148. l. 25. r. *acrids*;  
p. 149. l. 21. r. *half an Ounce*; p. 153. l. 13. r. *least* f. *most*; p. 155. l.  
20. r. *Brooktime*; p. 159. l. 28. r. *Barly*; p. 167. l. 7. r. *serous* l. 17.  
dele *into*; p. 172. l. 19. r. *Concilia*; p. 176. l. 28. r. *mild*; p. 182. l.  
26. r. *Illusions*; 194. l. 16. r. *Meals*; p. 233. l. 8. r. *Calum*; p. 26c.  
l. 51. r. *chord*; p. 266. l. 10. r. *this*; p. 267. l. 3. r. *is pumped*; p. 268.  
l. 8. r. *particular*; p. 269. l. 14. r. *this*; p. 279. l. ult. r. *old*; p. 291.  
l. 12. dele *European Pulses*; p. 292. l. 1. dele *European Pulses*; p. 244. l.  
15 r. 98; p. 303. l. 19. dele *European Pulses*; p. 309. l. 24. dele *Eu-*  
*ropean*; p. 31c. l. 1. dele *European pulses*; p. 331. l. 15. r. 6 *pulses*; p.  
332. l. 29. r. *is the*; p. 335. l. 20. r. *Ventilation*; p. 350. l. 2. r. 34. f.  
358. l. 5. r. *Will* does not; p. 375. l. 20. r. *Divulsion*; p. 322. l. 4. r.  
*Augustia tassis*; p. 394. l. 16. r. *without*; p. 400. l. 30. r. *Bladders*; p.  
403. l. 24. dele *again*; and p. 405. l. 24. r. *obscure*; p. 410. l. 17. r. *Affi-*  
*ons*; p. 413. l. 18. dele *dry Sinus*; p. 414. l. 5. r. *Medisines*; p. 426. l.  
11. r. *Sorbitions*; p. 430. l. 6. r. *Notion*; p. 432. l. 7. r. *neiber*; p. 467.  
l. 22. r. *Hippocrates*. Introduction, p. i. l. 1. for *in* r. *is*; p. iii. l. 17.  
r. *Audrix*, dele *and*; *ibid.* l. 18. r. *organical*; *ibid.* l. 28. r. *Cicatricula*.

A N

# INTRODUCTION.

*The Physiologia described by the Motion  
of Humours.*

**T**HE Pulse in the Motion of the Heart and Arteries, and the Original of all the Animal Motions.

The Veins arise from the Arteries as well as the Lymphatics, and the Blood and salt Serum must have their Motion in the Veins and Lymphatics, from the Blood in the Arteries projected by the Pulse.

The Nerves arise from those Arteries which go to the Brain, and the Brain-Glands are only Twists of the Arteries; and from them the Nervous Filaments arise, which are the secretory Vessels of those Glands; and thus the Nerves arise from the Heart, as *Aristotle* asserted in *Lib. 3.* of his *Natural History*; and he observed, that the *Aorta* was a nervous Body, which terminates its Cephalic Branches in the cortical Glands, and those in a Nerve, and the Nerves in the Fibres, made for voluntary or natural Motion, or in the Membranes for Sense.

a

If

If there had been any Pump design'd for the Motion of the animal Spirits, they ought to have been contain'd in the same Cavity as the Chyle is in the Guts, and the Blood in the Heart; unless we may affirm, that the external Compression by the Membranes of the Brains may promote the Motion of the Spirits into the Nerves and Muscles, and their Return into the Blood (as other secreted Humours do) so the Inspiration promotes the Reflux or Motion of the Blood in the Veins by Compression on them.

The glandulous Viscera, as Liver, Spleen, Kidneys, and both conglomerate and conglobate Glands, arise from the several Branches of the *Aorta*, and are only Twists of it.

The membranous Cavities of the Body have their Original from the Nerves, and their Sense and Contraction thence, but are naturally irritated in their Motion of Expulsion by the Humours contain'd in them.

All the natural, vital, and animal Actions are but several Motions according to *Galen*, ἐνέργεια δευταρχὴ κίνησις ἔστιν, and by the several Motions I will describe the several Actions, Natural, Vital and Animal; having first premised, that there are two sort of Motions observed by *Galen*, Alteration, and local Motion.

Alteration is the Motion of Fluids in their Particles, which produces new Qualities. *Φορα'* is that Motion which alters the Situation of the Fluids or Solids. The



The Chylification is by the Intestine Motion of the Air in the Aliment, occasion'd by the Ferment of the Stomach secreted from the Blood.

Distribution is the Motion of the Chyle in the Lacteals, produced by the peristaltic Motion, and the Respiration.

Sanguification is the Change of the Chyle into Blood by the circulatory Motion, which is the alterative Faculty.

Nutrition is the filling of the circulatory Vessels, and the Application of the sanguinous Fibres, to increase or nourish any part.

The Circulation supplies the Want or Office of the attractive Faculty.

The *Auctri* and *Facultas* is the Distention of the original Vessels lap'd up into many Folds, (which is apparent in the sprouting Leaves of Trees) in every *animalculum in semine*.

The procreative Faculty is the Projection of the *Animalculum* into the *Uterus* of the Female, and *Galen* does assert the same, and affirm'd, that the *Embrio* is an Animal having Sense and Motion. And 'tis probable, that the Motion of the *Animalculum* in the *Catricula* is mistaken for the Pulsation of the Heart, because the Tadpole's Tails are in continual Motion.

The expulsive Faculty is the Motion of Humours by the Force of the Circulation thro' the Glands, or else the natural Con-

traction of the Fibers, irritated by the Quantity or Quality of the Humours.

The retentive Faculty is the natural Tone of the Nerves, Membranes and nutritious Fibres, by the Animal Spirits, such is the retentive Faculty of the Womb, Stomach and Bladder.

The Sensations are Motions on the Animal Spirits, excited by outward Objects: The Passions are violent motions in the animal Spirits, and are most evident in the motions of the Heart, where they are said to be.

Voluntary motion is from the beginning of the Nerves, where the τὸ ἡγεμονικὸν resides; and directs the motion, and the Body is but the Organ of the Soul, and is framed for its Operations in all Parts.

The natural motion, as the Pulse, Respiration and peristaltic motion, depend on the constant Influx of the animal Spirits, and that depends on the Pulse.

The Notion of a Circulation was very ancient; but before *Hippocrates* and *Plato's* time 'twas lost; yet there are some Passages in their Writings which seem to assert it, as *Galen* quotes it, ὁ Πλάτων τὴν καρδίαν ἐλεγεὶν πηγὴν τῆ περὶφερομένη σφοδρῶ, αἱμαῖοι καὶ πάντα μέλη.

In *Hippocrates de Officiis naturae*, he affirms, That the Veins diffused thro' the Body give Spirit, Defluxions and Motion, but he did not know where they began and ended. Κυκλῶ γὰρ γεγεννημένον ἀρχαὶ ἐκ εὐρέδου.

*Galen,*

*Galen*, when he had reflected on the motion in the *Vena cava*, the *Valves* on the Vessels of the Heart and Arteries, and the bleeding in the Arteries, and their rise from the Heart, allows, that the Heart communicates a florid Blood and Spirits thro' the Arteries to every part; but he was prejudiced by the Notion of the Parts attracting their Nutriment, as Plants do from the Veins which rise from the Liver. And why might he not assert Attraction, since he observed that in the Load-stone? Thus the old Writers proved the Attraction of the solid Parts; and the new Writers, the Attraction of the Particles of the Fluids. That there is some Attraction by rarifying and evacuation of Humours is evident: If the Body be evacuated by Sweat, the Blood will come more towards the Skin, and its Capillaries, and less towards the inwards Parts; and if Evacuation happen in the *Prime via*, the Blood will tend that way by the Pressure of the external Air. If the Head or any part be over-heated, the Blood will tend that way where the Pressure is least, and then much *Serum* will be evacuated by the Glands about the Head. The Attraction of the Load-stone is the Proof that one Solid may attract another. The Attraction of Water thro' a Pipe proves, that a Fluid may be attracted by our Mouth or a Syringe; but the Attraction of two Fluids is not yet proved; and the Attraction of the Load-stone is



only a single Instance of a particular Body. The Attraction by a Pipe is by external Pressure; and such is frequent in animal Bodies. The Evacuation empties some Vessels, and the Air in the next presses the Humours into the empty Vessels. So if we by a stimulating Medicine empty the Guts, the Bile presses from the Liver, and the *Succus Pancreaticus* from the Glands, and the Mass of the Nutriment from the Stomach. The intestinal Glands draw from the Arteries, and irritate their Motion that way. Air is first attracted and the Spirits, because lightest, after them Water, then the Solids. 'Tis *Attraction* in appearance that gives the motion to Humours; but that is really a *Propulsion* by the Force of the Circulation or Irritation of the Organs, or external pressure of the *Atmosphere*.

The Obstruction in any Gland fills the Vessels, and occasions the Flux thro' other Glands; and we must allow the Suction of Air, Spittle or Urine, or any secretory Humour is made by Evacuation, or the Rarification of any Humour in a Part, as by a Cupping-glass the *Serum* is drawn or pressed from the cutaneous Glands; and in Defluxion the phlegmatic Lympha is drawn or pressed to the Head.

*Hippocrates* mentions the motion of the Humours, as the Cause of Diseases; pain from rarified Blood, Vertigo, Tenebriosa from Blood, tending to the Eyes; Apoplexy

for

for want of motion of the Blood ; Cold and Rigour for want of motion ; Delirium from too much motion of the Blood ; *Sopor* for want of motion ; in Defluxion the *Serum* is too much moved to the Head ; in the *Sopor* he foment the Head with warm Water, till the *Apoplectic* and *Soporons* came to themselves ; he bathes the mad *Persons* in Tepid Baths, to evacuate hot Humours and procure sleep.

In the following Chapters I shall prove, that all Diseases are some animal motion altered from the Natural.

---

*The Pathologia ; or the antecedent Cause :  
The Disease and Symptoms are preternatural Motions of our Humours and solid Parts.*

**A** Moderate Circulation of the Blood (when the Pulse runs about 75 in a minute) produces a sweet Temperies of the secreted Humours in the Blood, a due quantity of Blood, a moderate Consistence, and moderate Secretions from it.

We may consider the Blood as a River flowing through a Canal, and the secretory Vessels as Rivulets running out of it ; all the motion of the Rivulets will depend on the motion of the River in the Canal. When that moves in any Excess, the Rivulets will

run faster; when the motion in the Canal is slow, that in the Rivulets will be also defective in their natural Celerities.

We may next consider the Blood as a compounded Fluid; the greatest part of which is sweet Chyle, naturally moist, with a salt Lympha, a bitter Lympha, a slimy Lympha, and an acid Lympha; and these Lympha's make the natural secretory Lympha's thro' their proper Glands, and give the particular Qualities and Rarification and Motion to the Pumps of the Circulation.

Since Life and Health consists in a moderate Circulation of Humours, a Disease is some immoderate Motion of the same, in Excess, when the *Bilious Cacochymia*, the Salt, or *Atribilarian* Winds are produced; or else the natural Motion is defective, and then the slimy, the watery or acerbic *Cacochymia* are produced.

The motion in the secretory Rivulets is not only altered by that in the Canals; but the vitiated quality of the Blood is communicated to the secretory Lympha's, and that affects the secretory Vessels, as the *Cacochymia* does the motion of the Blood-Vessels, especially the Heart and Lungs.

Besides the Tincture of the secretory Lymphas, the Blood moves thro' all the secretory Glands, external to communicate natural Heat and Nutriment to them, and by affecting them with *Tumors* or *Pains*, by the hot or cold *Cacochymias*; the Instruments of the

Secre-



*Secretions* are altered, and thereby deprave the *Secretions* by stopping or irritating them. By the Nerves the Motion and Sense is communicated, and all *Secretions* are either stopt, deficient, or excessive; or depraved by the Quality of the secreted Humour, or nervous Affections, which are Convulsions, or debility of *Spirits*, *Palsie* in the *Sphincter-Muscles*.

The chief of the *Secretion* is thro' the Glands of the Brain into the Nerves, which are the immediate secretory Vessels; and from them the *Spirits* move into the medullary part, where they produce the motion; in which Imagination, Judgment and Memory consists. In the Organs of the Senses the several Sensations, in the Muscles the several natural and voluntary Motions; the Natural are perpetual as the motions of the Heart; the respiratory Muscles, and the peristaltic Motion. The voluntary depend on the Will directing of the animal Motion.

The motion of the animal *Spirits* in their secretory Rivulets depends on the motion of the Blood in the great Canals, which gives an Undulation to them by every Pulsation, and that gives a Tension to all the nervous Rivulets or Fibrilles in the Sensories, Muscles and Membranes.

Besides the Motion and Qualities communicated to the nervous Fluid by the Blood, the Blood affects the Glands of the Brain by its Heat and *Cacochymias*; and it also affects the Instruments of the animal motion,

motion, as the *Membranes, Nerves, Muscles*.

This animal Secretion is necessary to Life, because the animal Spirits moved the *Muscles* of the Heart and Respiration, and the peristaltic motion perpetually; and these I reckon as three natural Pumps. The Heart pumps the Blood in the Arteries, the Diaphragm the Blood in the Veins, the peristaltic motion of the Guts, the Chyle into the Lacteals.

All mechanical Motions were called natural Actions; but the motion of them is irritated or made defective or unequal, all by the Humours contain'd in them, as well as by the irregular motion of animal Spirits, such is the motion of the Guts; but the sphincter *Muscle* depends on the Will, as well as the Contents in the Guts, for its Motion or Irritation.

Sense and muscular Motion, and the Operations of the Mind are different motion, irritated or stopt when preternatural, and depend on the Affections in the Nerves; but the *Cacochymias* and *organical* Tumors and Obstructions affect the Glands, or the Instruments of the motion of the Nerves, and thereby deprave their Actions; and thus the Circulation alters the animal Actions, as a Disease produces some Alteration in the Actions, natural, vital, or animal.

By the Pulse we know the motion of the Heart, and the general Circulation, Motions and Secretions, and the several *Cacochymias*

*mias* which irritate or stop the motions in the secretory Vessels.

Those external motions which precede the diseased motion, are the external Causes of it. The internal *Cacochymias*, which irritates any Excess of the natural motions, or occasion any Defect in motion, are the internal Causes of a Disease. The Disease it self is a depraved unnatural motion of the Humours; and the motion consequent to the diseased motion is the Symptoms of the Disease, which the old Writers called the *Actions* of some part, but I think they are more pertinently called the *Motions*; and *Galen* says, Τὸ πρῶτον τῶν κινήσεων ἐνέργεια. The Pump of the Heart gives a perpetual motion to the Fluids, and the Fluids irritate or stop the motion of the organical solid Parts.

The two general diseased Motions are the ὑπερβολὴ (or excessive) or the ἐλλείψις (or defect in the Circulation or Secretions) the animal motions are in the Nerves, the natural in the Chylification, the Distribution of the Chyle, the Sanguification of and Nutrition.

The Chyle is not made by local motion of Humours or any Parts, but by the intestine Motion of the fermenting Particles, whereby the Meat is dissolved into a chylous Tincture, and that depurated by the mixture of Choler, and thereby turns milky, and forced from the *Feces* by the peristaltic Motion; by a long Circulation 'tis sanguified



ed and changed into Nutriment, and carry'd to each part by the Circulation, and the secreted Humours are digested and prepared and secreted by the Circulation. The *Pituita* or *Lacteal Lympha* is prepared and secreted in 24 Hours, the *Bile* in two Days, the *Succous Melancholicus* in three; on the different Time necessary for the Preparation of these Humours, the different Types of Fevers depends. These two *Excrementitious* Humours from the Blood are the Sweat and Urine which pass their proper Glands, and depend on the Force of the Circulation; the *Feces* of the Choler and pituitous Lympha, and melancholic *Acid*, are excreted with the *Feces* of the Chyle by Stool, by the Force of the peristaltic Motion; and some of the melancholic Humour passes by the four Sweats, and is excreted by the Urine as well as with the slimy Lympha into the *Prima via*.

I will first consider how the external Causes act on us by rarifying or condensing our Humours, and accelerate our Circulations, or make them defective.

Fire, hot Air, hot Baths, hot Diet, Exercise, Anger, &c. rarifies the Air in our Bloods and Spirits, and thereby irritates the circulatory Motions.

Cold Air, cold Baths, cold Diet, Rest, Fear condense the Air, and stop the Circulation.

All Externals act on us by their own motions, and the Affections they produce are  
either

either strong motions, or weak in our Bodies. *Galen* observes, That the Spirits and Blood are soonest altered, then the *Bile*, but the *Succous Melancholicus* difficultly by Externals or Medicines.

The *Cacochymias* are produced by an Excess of Motion or Defect. The Hot stimulate the motion of the Heart in Fevers and Defluxions; they stimulate the Womb to Abortions, the Urine Vessels in the Strangury; the Stomach to vomit; the Guts in *Diarrheas*; the Nose in sneezing; the Lungs in coughing; the Nerves in Convulsions; the *Singultus*, *nausea*, *cardialgia*, *pica*, *fames carina* are irritated motions in the Stomach, Palpitation in the Heart, Horror, Rigor, Pandiculations, are irritated motions in the Muscles.

Critical Motions are excited by the quantity or acrimony of Humours, whose Digestion depends on a long Circulation.

*Hemorrhagies* are motions irritated by the Quantity, corrosive Quality, or violent Rarefaction and Circulation of Humours, when the Vessels are thin or weak by Tense.

The cold *Cacochymias* are produced by a defective Circulation; and these stop the Secretions by thickning the Consistence of Humours, or by oppressing the secretory Glands, by Inflammations, schirrose Tumours, dropical Serum, or pituitous or windy Inflation; these stop and oppress all Evacuations.

The

The Obstructions may be in the Arteries, Glands or secretory Vessels ; and there may be Obstructions made by sily hot Blood, as well as the cold Grumous.

The Cavities of the Vessels *coalesce* by Ulcers, are compressed by Tumors, obstructed by viscid Humours, constricted by Pains and Convulsions, subside by Astringents, or Cold or Dryness.

Other Diseases follow Obstructions in the whole Body, as the Colour of the Skin in the Jaundice, Yellow. In the Obstruction of the Spleen, Black : The Obstruction of the Serum, the Dropsie, or *Oedematous* Swellings, and pale Colour in the Skin. In particular parts the *Erysipelas* and *Herpes* depend on the Obstruction of the Gall, the Cancer on the Obstruction of melancholic Blood.

One Disease produces another, as Pain and Inflammations, Fevers by irritating the Arteries, and stopping the Blood, so as to regurgitate to the Heart, and irritate its Valves.

These Symptoms are the sensible Qualities in the Skin, as Heat, Cold, Dryness, Softness, Plumpness, Hardness ; and the different Colours and Qualities depend on the Blood-circulating slowly thro' the Skin, and leaving there a depraved Nutriment.

The Privation of the Circulation to a part, and defect of nutritious Matter, is an Atrophy. Gracility is when but a little Nutrition is conveyed to a part, when the Nu-  
triment



triment is mixed with some *Cachochymia*, it produces a Scurvy or Leprosie. If too much *Nutrimment* come to a part, it occasions *Obesity*.

I will next give an Example of the manner how motions altered become the Diseases of the Stomach, the Nerves, the Lungs, Liver and Kidneys.

In the Stomach, if the fermentative motion is continued too long by the hot *Cachochymia's* mixed with the slimy Ferment; or if the Meat be very acrid, or any hot Diseases possess the Stomach, as Inflammations, *Erysipela*, or the acrid Humours in Fevers, the Digestion is excessive, and nidorous or putrid; but if the Ferment of the Stomach be pituitous, watery, or over-Acid, a Crudity is produced, and a weak Digestion: Thus the Digestions varies with the *Cachochymias* in the Blood, or the Meat which is one of the Non-naturals; and as such alters the Fermentation. A Semierudity is a cold Windiness and Acerbity in the Stomach. A hot Wind and a Bitterness, and sharp Acidity is from an over-Digestion. The Quantity of the Meat exceeds the Virtue of the Ferment and the Tumors, Ulcers, Inflammations: Pains cause the Stomach to evacuate the digesting *Mass* too soon, or retain it too long.

The corrupt Humours or Diet in the Stomach irritates Nausea, Heart-burning, Vomiting and Purging.

Thirst is an Appetite to Drink, irritated by a salt Humour or Fever contracting the *Membrane*, and drying them. The

The cold acid Humour irritates the Appetite to *Meat*, which is from a Contraction of the Stomach by its sub-acid Ferment.

The Appetite lost is by hot Humours or want of the Sense of Suction. If Air did not come into the Stomach it would not make Eructations, nor would its sides be kept asunder, neither would the Guts be kept distended as they are when empty; therefore this way the Air passes freely into the Blood; if it did not, all the Perspirations and Excretions would be stopt, and the Vessels subside if Air did not this way constantly insinuate it self; and since we constantly swallow our *Saliva*, tho' we do not observe it, we must also swallow Air with it continually; and ill Smells give a Nausea to the Stomach.

By consent of Nerves with the Heart and the Stomach, Poisons or ill Humours causes a *Syncope*; by consent with the Brain, the Stomach, produces by bilious Humours in it, a *Vertigo*, by the *aruginous* Bile a Delirium, by the black grumous Blood, a *Melancholy*; these Diseases are by Irritation of the *Nerves* in the Stomach, and the Irritation in the Head produces Sickness and Vomiting, and the Irritation of the Nerves in the Kidneys produces Vomiting.

I will next describe the diseased Motions in the Nerves.

All our Sensations are Motions received from the Motions of the Objects, and the Motion in the Nerves is the Idea which articulates

ulates inwardly to the Organs of Imagination, Judgment, Memory, too great a motion from the Object destroys the Sense, and too faint makes an obscure Motion, which does not lively represent the Idea, or carry its undulation to the Brain.

Whatsoever Humour obstructs the Organ or the Nerve, or the Brain, depraves the Action of the Sense and its Perception, and makes the Instruments unfit for Sensation.

The Nerves are oppressed by a fizy Blood in the Apoplexy and Palsie, which hinders both Sense and Motion, tho' the Respiration and Pulse which depend on the *Cerebellum*, are free.

So Inflammations, Pains, or a crude Serum obstruct the Organs, and deprave the Actions of the Eyes, Ears, Smell, and Taste.

The *Deliria*, and violent motion of the Spirits, irritated by a biliose Humour, secreted with them.

An Inflammation in the Membranes of the Brain irritates a *Phrenitis*, or else some biliose Vapour in Fevers. The animal Spirits fixt by an acid, produch a fixt Imagination, as well as a slow Pulse and Respiration in Melancholics.

In Foolishness and Oblivion the Motion of the Spirits is too slow or stopt or oppressed by Tumours.

In sleepy Diseases the Brain is oppressed by Serum: In the *Vigilie* the Spirits are  
b over



over-rarified by thinking, or the hot Externals, or the hot *Cacochymia* in the Nerves.

1. By these Instances it appears, that the Diseases of the animal Spirits, as well as those of the Blood, are excessive or deficient Motion of the Spirits or Blood; the diseased Motions of the Spirits alter the Blood-circulations, and the Blood circulating with its *Cacochymias*, alters the Motion of the animal Spirits.

2. The *Arteries* and *Veins* of the Lungs receive the Blood from the Heart, and carry it to the left Ventricle.

The Blood is stopt by a Polipus, Siziness, Defluxion, by Tumors, Inflammations, and this is known by an unequal intermitting Pulse, and Dispnea.

The Blood is irritated in ill Motion by the hot *Cacochymias*, *Fevers*, *Coughs*, *Pus*, and this is known by a quick and frequent Pulse and dense Breath.

The Nerves, Blood-vessels and Air-vessels may externally be compress'd by an *Empiema*, Dropsie, Abscesse, Rupture in the Air-vessels, or Convulsion of them; and this is manifest by the unequal quick Pulse, and *Orthopnea*.

3. The Air-vessels receive and efflate the Air.

The motion of the *Air-vessels* is irritated by hot *Air*, by a quick Pulse, convulsive motion of the respiratory Muscles, and by coughing. The motion is slower by the slow Pulse, weak Spirits, Constriction of the Organs in the *Asthma*, cold *Air*, and cold *Cacochymias*. *Ea animalia quæ in Caverna latent thoracem movere minime videntur*, Galen, l. 4. *delocis affectis*. When there is a difficulty of Breath, there is no Efflation, but in Sleep there is an Efflation. No Author has so fully described the Ruptures of the Lungs, as *Hippocrates* in his Book of internal *Affections*. The great, quick, frequent Respirations are the Motions preternaturally irritated. The slow, rare, small, unequal Breath, are the deficient Motions; the *Apnea* is referrible to the Deficient, and has the same Causes in a greater degree.

Since the local Motion of all the solid Parts depends on the Rarification of *Blood* and *Spirits*, or their Condensation, or their cacochemical Qualities in the Organs or Instruments of Motion: The Motion of the Parts has the same antecedent Cause, as the Pulse, and we may not only discern by the preternatural Pulse the antecedent Causes, but also the Strength and Weakness, the Greatness and Smallness, the Celerity, Frequency, or Slowness and Rarity, and Inequalities of the altered animal *Actions* in all Parts. The preternatural Motion of the Heart will shew the

*Alteration* of the Motions in other Parts, whether irritated or stopt, or unequal. The *Secretions* thro' the Liver are either irritated by the *Acrimony* in *Choloras*, *Diarrheas*, or stopt as in the Jaundice, by the Viscidity or Petrification of the *Choler*: Or the Glands and secretory Vessels are compressed by Inflammations, Schirrus, Abscesses, or other Obstructions. So in the *Urine-Vessels* the *Secretions* is hindred by Obstruction of the secretory Glands and Vessels, by *Blood*, *Gravel*, *Stone*, *Pus*; or else compressed by *Inflammations*, *Abscesses*, *Schirrus*; or the Vessels irritated by the hot *Cacochymias*, and their acrid, bitter, or corrosive Qualities in the *Strangury*. And the symptomatical Motions are communicated from some other part by the Nerves and Debilities, want of Sense and Motion, by Ulcers, thence. And as Health depends on a moderate motion of Blood and Spirits, so the *Actions* of the *Soul* are best perform'd by a moderate and serene motion of animal *Spirits*.

Pleasure is an agreeable motion in the sense of Feeling. Pain is a sudden disagreeable Sensation, because the Objects distend or distract the membranous Fibres violently and quick. Fulness produces a tensive Pain. Weight a heavy Pain. Inflammation a pricking pulsatory Pain. Sharp Humours a corroding Pain. There is Pleasure in the Excretion of what is uneasy. Rigors and Horrors have pale *Skin*,  
and



and stopt or slow Pulse, and are Convulsions in the *Skin* and *Muscles* irritated by the Stagnation of the Blood.

Poysons and venomous Bites are external Causes of the *Hydrophobia*, *Delirium*, *Convulsions*, or *Inflammations*, *Putrifactions*, *Corrosions*, which are different and unnatural motions of the animal *Spirits* and *Blood*, caused by a venomous Ferment infused externally into the Body.

Pain hinders the muscular Motions, and so does Tumors and Inflammations, Schirrose Hardness, Obstruction in the Nerves, or Compression on the Cortical part of the Brain; and all the Faults of the solid Parts in Conformation, Cavities, Figures, Situation, Magnitude, Number, or the Solution of Unity, Fractures, Dislocations, Abscesses, Ulcers, Wounds. The Tongue loses its *Sense* and *Motion* by the Oppression of the Nerves in the *Apoplexy*, or *Palsie*, and the Obstruction of its Nerves or Blood-vessels alter the Faculty of Tasting, and the Cacochemical *Saliva* depraves it. The Tumors or Inflammation in *Muscles* alters the Deglutition and Voice.

We must consider all the Parts necessary to Respiration, when natural, to apprehend its preternatural *Motions*.

1. The Brain and Nerves supply the animal *Spirits* for the *Motion* of the Diaphragm,

*Intercostals* and *Scapular Muscles*, and the *Spirits* are weakly moved in paralytic Cases; and after great Evacuations, and this the weak Pulse discovers.

The *Spirits* are irregularly mov'd in Convulsions, or the *Motion* is oppressed in the beginning of the Nerves, in *Apoplexies*, and *Sopors*, *Epilepsies*, and *Catalepsis*; and this is evident by the oppressed Pulse.

*The Art of feeling the Pulse explain'd by the following Corollaries.*

**T**HE Pulse in the Left Arm is stronger than in the Right.

The Disease is in the upper Branches of the *Arteries*, when the *Pulse* appears most altered above the Bone of the Wrist in the Left Arm; and it is in the descending Branches, when the *Pulse* appears most altered below the said Bone in the Left Arm. The diseased *Pulse* above the Bone in the Left shews the Disease in the Cephalic Circulation.

The diseased *Pulse* above the Bone in the Right Arm, shews the Disease to be in the Thoracic Circle.

The diseased *Pulse* below the Bone of the Right Arm, manifests the Disease in the *Celiac Circle*. The

The diseased *Pulse* in the Right, under the Bone farther, which is felt by the third Finger, shews the Disease to be in the Illiac Circle, Uterus or Skin.

The diseased *Pulse* on the Right or Left *Arm*, often shews the side of the Body on which the Disease happens.

We know the particular part and its Affection by the compounded *Pulse* of each Disease; so by the quick and frequent *Pulse* we know Fevers and Defluxions, by the hard Inflammations, by the viberating *Pains*, by the small and frequent Fluxes, by the full Obstructions of the *Secretions*, by the great *Plethora* of Humours, by the soft a Defect: These are the several *Species* of Diseases in the Blood.

The several organic *Parts* are only a Texture of the arterial, renous, nervous, lymphatic and glandulous Vessels; and the organical Actions are altered either by the Alterations in the Blood-vessels, or Nerves, or Lymphatics, or Glands: And since all the Vessels in Animals spring from the *Aorta*, the *Actions* of all parts, whether similar or organical, correspond with the Motion in the Arteries, which is the *Pulse*.

Anatomy shews the particular Texture of each part, its Use or Action.

In the left *Arm* we discern the vital *Actions* best, whether they exceed or are deficient.



By the exceeding or deficient *Pulse* in the left *Arm*, we discern whether the Chylification, Sanguification, Nutrition, be exceeding or deficient; and these are the natural *Actions*.

By the *Strength* or *Weakness* of the *Pulse* we know the animal *Actions* are altered, or irritated or oppressed, by the Inequalities in the *Pulse*.

The first thing we must do is to find the particular Circulation in which the Disease resides, otherways we cannot know where the Disease is by the *Pulse*, belonging to each Disease. The Situation of the part affected is known by the Circulation in which the Disease is.

The next Observation is, the compounded *Pulses* must be observed, by which we may know the Disease and Part affected; so in a Plurisie the *Pulse* is quick, frequent and hard in the place above the Bone in the right *Arm*, which shews the Thoracic Circulation; the vehement and hard *Pulse* shews the *Pleura* affected, and the Names are given to Diseases, which comprehend the Part as well as the Affection, such are *Pleuritis*, *Nephritis*, *Phrenitis*; and some *Actions* belong most particularly to some Parts, as Vomiting to the Stomach, Motions to the Nerves, Secretions to the Glands, and then if the *Pulses* compounded discover the Affections, the part affected will also be known; so that by the Affections,  
and

and by the Actions altered, we know any part affected.

The antecedent Cacochymia is discovered by the *Pulse* in the left *Arm*; the hot by exceeding *Pulses*; the cold by the deficient *Pulse*. And we must observe, That there is the same Cacochymia in all the secretory Vessels as in the Blood-vessels, to irritate or stop the secreted Humours; and the continent Causes of a Disease are the antecedent Cacochymias fixt, or this forced by the *Pulse* through any particular part; and generally Diseases are produced by altering both the solids and fluid Parts.

*Note*, There is a Repletion in Fevers made by some Secretion obstructed, and for this Reason the Body is heavier, and we are obliged to make Evacuations in epidemical Fevers, which are not rationally cured without it; and we observe the symptomatical Evacuations in the beginning, and help them.

The circulatory Motion altered is the Disease of an animal Body, which consists of Fluids moving thro' certain Canals.

The Symptoms are the Motions altered in the secretory Vessels, such are the nervous Filaments, &c. and these are called the Actions of a part.

The sensible Qualities in the Skin, as hot, cold Colours, depend on the Cacochymias in it.

The

The Excretions from a part have their Tincture from the Cacochymia, and are irritated by it.

If we knew not the part affected, yet we might cure the greatest part of Diseases by removing the antecedent and continent Causes of Diseases; so if I can cure an Inflammation in several, I can cure any particular one in the Eyes, Ears, Head. 'Tis only the Reliques in Diseases which require Topics, and some Symptoms are only amongst the *Coindicantia*; but the principal Indication is taken from the Cause of the diseased *Pulse* which must be cured.

Where Diseases are external we need no other Evidence of them and the part affected, then our Senses; but when Diseases are within, and not evident to our Senses, there can be no better way of knowing them, and the parts affected, than by the *Pulse*.

I have endeavour'd to accomodate the old and modern Notions of *Physicians*; the first Thoughts about a Subject are most confused, which has obliged me to reassume and repeat some Things, for which I must beg the Reader's Pardon, I having no Health to transcribe what I have writ.

Physick has been long perplexed with variety of new Experiments, and Hypotheses, to explain all *Phænomena*'s by the Elements of Humours, the old *Galenic*, or the *Chymical*  
or



or *Cartesian* Principles; but all I aim at is the retaining Things sensible, the Motion of the Blood, and *Secretions* of Humours, and to observe their sensible Tastes and Qualities. This is all I assert is necessary to help us to know or cure Diseases methodically and rationally; and this is no more then the *Chinese* and *Hypocrates's* Notions more fully explained.

I have omitted one Observation of *Galen's*, That all the Arteries rise from the Heart, and are divided into the ascending or descending Branches; the Ascending go to the parts above the Heart, and the Descending to the parts below. And because the parts are more below than above the Heart, the Descending are greater than the Ascending Branches. From this Observation I infer, That more Blood circulates downwards than above, through the ascending Branches. And since the Circulation through the ascending Branches, is in a smaller Circle, the Blood circulates with greater Velocity, and in a shorter time through the great Mass of Blood in the descending Branches, whose Circles are larger, and contains a greater Mass of Blood.

And *Galen* in the same Place, *de usu partium*, has this Remark, That Branches are sent to the Parts from the next great Trunk

Trunk of the Arteries, unless it be to the Testes and Mamme; and many of the exterior Muscles and Cutis. In these Particulars necessary to render the Motions more slow for the Secretion of Humours, or Application of Nutriment.

---

THE

( 1 )

---

THE  
*Physician's Pulse-Watch.*

---

V O L. II.

---

C H A P. I.

*Containing the Description of those Diseases, which are Treated of in the following Papers, by Observations taken from the Pulse.*

**T**HE Pulse discovers the exceeding and deficient Circulation, the exceeding or deficient Secretion, and also the irritation or oppression on the Circulatory Organ; and these are the chief kinds of Diseases to be known by the Pulse.

B

The



The Pulse also discovers the Cause, which alters their own Motion, whether they be the external Causes, or inward Humors; and whatsoever alters the Pulse alters the Circulation and Secretion, and the Actions of the circulatory Organs; and thus the Pulse discovers the Cause of Diseases.

In every definition of a Disease, 'tis necessary to describe the Disease, and its Cause, and both are discover'd by the Pulse.

By the Observations of the Pulse in each Disease, 'tis easie to discover the preternatural State of the Circulation in it, for a great, strong, full, quick, frequent and equal Pulse, makes a Circulation great, strong, full, quick, frequent and equal, and *è Contra*. I will describe the preternatural Circulation, and its Cause, in these Diseases.

A *Plethora*, Is a strong and full Circulation, which distends the Vessels by an exceeding quantity of Blood, and this may be discerned by the full Pulse.

An *Atrophy*, Is a small, weak Circulation, thro' defect of nutritious Humors; and this the soft, empty Pulse discovers.

A *Fever*, Is a violent Circulation, excited by some acrid Humor, in order to its Digestion and Expulsion, by a *Crisis*, and this is evident, by the great, quick and frequent Pulse.

An

An *Ephimera*, Is a violent Circulation, excited by an acrid Fume, which rarifies the Blood and Spirits, and is from the external Causes, and this is expelled by a critical Sweat or Perspiration in three Days.

A *Malignant* Fever, is a small, and weak, and frequent Circulation, with oppression of the circulatory Organs, thro' want of a due Rarification of the Humors.

The *Plague*, is a small, weak and frequent Circulation, thro' want of Spirits to preserve the Crasis of our Humors, because they are destroy'd by a poysonous Vapor from the Air or Earth.

The *Small Pox*, is a less Degree of the same pestilent Fever as the *Plague*, which has its *Crisis* like it in three or four Days, and the same Cause, Pulse and Circulation; the whole Mass is infected in the *Plague*, and only the *Serum* in the *Small-Pox* when kind, and the Circulation is small, weak, unequal, as the Pulse is.

The *Measles* and *Scarlet Fever*, are a small, weak, unequal Circulation, excited by a less Degree of putrid Blood, for its critical Excretion in three Days.

A *Tertian*, is a great, quick, frequent Circulation, irritated by a cholerick *Cachymia* for its Expulsion.

A *Quartan*, is a less quick and frequent Circulation, irritated by grumous, thick Blood, for its expulsion

*Quotidian*, is a smaller and less, quick and frequent Circulation, excited by a pituitous, crude Cacochymia for its Excretion, by its proper Glands.

*Hectick Fever*, is a small, weak and frequent Circulation, irritated by a pungent Matter in some part.

*Inflammation*, is a great, quick and frequent Circulation, with an Obstruction of the Arteries of some Part by sify Blood, as the hard and frequent Pulse indicates.

*Pleurisy*, is a frequent and quick Circulation, with an obstruction of some of the Arteries in the Pleura, by sify Blood.

*Hemorrhages*, are a great and quick Circulation, which forces the Blood to Extravasate, after which, the Circulation becomes small and languid at last; the Cause of this frequent Circulation is a salt Cacochymia.

The hot *Flatulencies* in the Stomach, depend on an exceeding, quick and frequent Circulation, by which, some of the hot Cacochymias are secreted with the slimy *Lympha* into the Stomach, where they over-rarify the digesting Mass into hot Winds and Nidorosities.

The



The cold, melancholy *Wind* in the Stomach depends on a slow Circulation, and a Secretion of the cold Acid, with the slimy *Lympha* of the Stomach, and this produces the Acid Crudity there, and cold Winds.

The *Cholera*, has a quick and frequent Circulation at first, (but after great Evacuations, a small, languid one) by which, some bilious Serum is secreted thro' the Liver or Stomach, and evacuated upwards and downwards.

*Anasarca*, is a small and rare Circulation, which occasions the Serum to Stagnate in the Extremities of the Body.

*Asciter*, in this the Circulation is small and frequent, with an Obstruction of some of the *Viscera*, and that occasions the Extravasation of the Serum into some Cavities.

*Jaundice*, in this the Circulation is quick and frequent, with an obstruction of the Bile Vessels, which the hard and frequent Pulse intimates, but at last the Circulation is oppressed by the abundance of bilious Serum.

*Scurvy*, is a Circulation, small, weak, frequent, unequal, being oppressed by an exceeding quantity of *Salso Acid Serum*, unless some Feverish Effervescence happens.

*Gout*, is a quick, great and frequent Circulation at first, irritated by a salt Serum, which is forced thro' the Glands of the Joints.

*Phrenitis*, the Circulation is small, quick and frequent, with an obstruction of the Arteries of the Brain, by the fizy and bilious Serum.

The stoppage of *Perspiration*, makes the Circulation great, quick, frequent, as in all Effervescencies of the Blood, by the *Perspirabile* retain'd.

The suppression of the *Menstrua*, makes the Circulation quick, frequent and small, by retaining the superfluous Blood.

*Pains*, the Circulation in Pains, is great, vehement and quick in the beginning, to discuss the Humor which irritates, but at last the Circulation grows languid, quick, and frequent; in remote parts and in all windy Pains, the Circulation is not disturbed.

*Hysterick Fits*, in these the Circulation is quick, frequent and weak, and unequal, with a Secretion of a hot Wind into the Nerves.

*Vertigo*, in a Vertigo the Circulation is small, unequal, intermitting, with a hot Wind secreted into the Brain, and its medullary Fibres.

*Epilepsy*, the Circulation is small, rare, unequal in the beginning, being stop'd by the

the Tension of the Arteries and Muscles, but in the continuance of the Fit, the Circulation is languid, small, frequent; in the declination of the Fit, the Circulation grows greater, but slow and languid, as the Convulsion goes of.

*Syncope*, in this the Circulation is weak, small, frequent, or the more rare, intermitting, unequal.

*Apoplexy*, the Circulation is small, obstructed, quick and frequent in the beginning, and if the Oppression be great, the Circulation is slow, rare, Intermittent, and at last, languid and small; in the *Lethargy*, the Circulation is undose, great and slow, because the oppression is less than in the *Apoplexy*.

*Palsy*, the Circulation is small, quick and frequent in the beginning, but afterwards rare, slow, small, languid, and intermitting.

*Palpitation* of the Heart, the Circulation is weak, small, unequal, which stops in the Blood-Vessels.

*Note*, That the Convulsions, Inflammations, Pains, Defluxions, &c. are distinguished into their Species by the Parts affected, which will be describ'd in the following Papers, and their Symptoms which depend on the Pulse and Circulation.



## C H A P. II.

*The Pathology and Indications in Diseases, built on the Knowledge of the Pulse.*

**A** Disease is an alteration of the natural Pulse and circulation, by which some actions of the Parts are altered.

All Diseases have either exceeding Pulses, which make a violent circulation and secretion, or deficient which produce a slow circulation and secretion, or unequal Pulses, whereby the circulation is moved unequally; these are the *Summa genera* of Diseases.

The exceeding Pulse and circulation depend both on an exceeding rarification of Blood and Spirits; and the deficient Pulses on the condensation of them; and the unequal Pulses on the oppression, or constriction of the circulatory Organs, or their Irritation.

Whatsoever Humour condenses or over-rarifies the Blood and Spirits, is the antecedent Cause of the Disease; as the *Cachymia*;

cochymia ; all external Causes act on the Blood and Spirits, and thereby alter the Pulse and Circulation.

If any Animal Action altered be a Disease, the Pulse and Circulation are the continent Causes of it, and the Humours which alter the Pulse and Circulation, are the antecedent Causes, and the evident Causes are the Non-Naturals ; and those that accelerate the Pulse, are the causes of the hot and acute Diseases; but those that stop the Pulses attend all cold and chronic Cases.

Health is a right temperies of the Secreted Humours among one another, or a just symetry of them, so as to produce a sweetness in the mass of Humours, and that causes a moderate Pulse and Circulation ; but the excess in quantity or quality of any one secreted Humour produces an intemperies in the Blood, and that causes the Pulse to exceed or be deficient ; the simple intemperies of the *Galenists* is only a great rarification or condensation of Humours.

The Symptoms in Diseases depend on the Pulses and Circulation, and their Causes.

We must compare the natural and diseas'd Pulse to know the greatness of their ease, and thereby the quantity of the Medicine indicated, and we must restore the  
na-

natural Pulse, by removing the cause of the diseas'd Pulses; 'tis not necessary for the cure of Diseases to inquire after the Elements of our Humours, but only the rarification and condensation of them, and the several Humours which are sensibly secreted; for these are the Causes of the diseas'd Pulses, and these have sensible Qualities which must be cur'd.

The first thing we must consider is the diseas'd Pulses, whether simple or compounded, and what is the Cause of them, and what we find contrary to the Cause is not the indication for the Cure of the diseas'd Pulse; so when I feel a hard Pulse, I immediately discern that the Cause of it is some obstruction in the Arteries, by sily or gumous Blood, and this indicates the Cure of that obstruction by removing the Cause of it. This is the method of finding out the remedy by Indications taken from the diseas'd Pulse, and its Cause, which are very obvious, and easily known; and if the Cause be remov'd, which altered the Pulse, it will soon return to its natural Motion, and that will make a healthful Circulation.

*Erasistratus*, as *Galen* says, affirm'd, That there was but one cause of Diseases, which he called the *παραμπτωσις* of the Blood in the Arteries, and we may now deduce most Diseases from the different motion of the  
the



the Blood in its Vessels ; and if the old Methodist's Notion be a little better explain'd it will agree with the same Opinion, for theirs *εἰς* is the obstruction of the motion of Humours in the circulatory as well as secretory Vessels, and their *ῥαυσις* is the motion accelerated in the circulatory or secretory Organs: Thus I may accomodate the old Methodists *astriktum* and *laxum* to the true Pathology, which is built on the circulation and secretion of Humours ; and as it was observed that the *astriktum* and *laxum* were sometimes mixed as in an Inflammation of the Eyes, with a Flux of Tears, so the circulation may be too quick in general, but stopt in particular Parts, as it is in the Pleurisie, in which the siziness obstructs the Arteries in the *Pleura*, but the Blood circulates too quick in other parts, as the Fever proves, and there is also an evacuation of the sily Lympha by the Lungs.

The Old *Galenist's* Opinion may also be reconciled with this Pathology, which imputes all hot Diseases in which the circulation runs too fast to Bile and *Atrabilis*, and all cold Diseases to a *pituita* and cold Melancholy, in which the Pulse and Circulation run too slow.

I must note that the Pulse which produces the antecedent Cacochymia, often differ

fer from the Pulse in the fits of a Disease, as in Convulsions, where the hot windy Spirits stop the motion of the Heart by a Convulsion, and thereby after many fits a cold Cacochymia is produc'd; but the Pulse, before the Convulsion is frequent and great, which produc'd the *Atrabilis* or hot Winds.

The first Indication is to preserve the natural Pulse in its Strength, or to restore it when weak.

The second thing is to alter the diseas'd Pulse to its natural state, and so long the Cure must be continu'd till that is effected, by removing the continent Cause which altered the Pulse and Circulation

The third is the indication preservatory, which is to Cure the antecedent Cause of the diseas'd Pulse; the Medicine is the Instrument by which the Cure is performed, and this must be used in due quantity, time, and order, as the nature of the Disease, the taste of the Medicine, and a long Experience directs; I will next propose a Scheme of the indications taken from the simple Pulses.

1. The exceeding, the vehement, the quick, the frequent Pulses, are produc'd by a great rarification of Blood and Spirits, and therefore indicate the condensing of the same.

2. The deficient, the rare, the small, weak, slow, depend on too great condensation of Humours, and indicate the rarification of them.

3. A full Pulse depends on a great quantity of Humours, and indicates all manner of Evacuations.

4. An empty or soft Pulse depends on too small a quantity of Humours, and indicates a full Diet, and the stopping of the Evacuations which empty it.

5. The hard Pulse is from some sify Humour stopping the Arteries, and indicates the Cure of the obstruction by diluting the size, or attenuating the grumous Blood in cold obstructions with a rare Pulse.

6. The unequal Pulses depend on some Cause which compresses, obstructs, or constricts the circulatory Organs, or irritate them, these are the Heart, Lungs, Arteries, Veins and Nerves, the unequal Pulse indicates the removal of the Cause which affects the circulatory Organs.

These simple Pulses are mixed in Diseases, as the Cachochymia are mixed, and both in the hot and cold there is a mixture of simple Pulses, so the exceeding Pulses are great, quick, and frequent, and they are sometimes small and quick and frequent, and they may be hard or soft, or unequal; so the deficient Pulses  
are



are commonly rare, slow, small, and these may be strong and weak, hard, soft, or unequal

When the Pulses are unnaturally compounded in Diseases, they will produce mixed indications; and that they may be more easily apprehended, I will give some instances of the compounded Pulses, and the indications under those special Heads to which I have referred all Diseases.

These Diseases were esteem'd cold by the Old Writers, Apoplexies, Palsies, Coma, Convulsions, Tetanus; but tho' a rare pulse and slow Circulation is produc'd by the frequent constriction of the Heart in the Fits, yet 'tis evident that the Pulse was frequent, which produc'd the Cacochymia that preceded, and was the antecedent Cause of the Fits.

---

C H A P. III.

*A Scheme of Diseases in the Blood,  
and Animal Spirits, and those of  
the circulatory Organs, and their  
indications from the compounded  
Pulses.*

1. **T**Hese Diseases happen in the Blood from its great quantity or defect, from its vitious qualities, violent motion, or evacuations, or its motion obstructed, on extravasation of Blood or Serum.

2. In the Plethora of Humours the Pulse is great and full, the Pulse which is full indicates all manner of Evacuations, and the great a cooling method against the rarification of Humours:

The Diseases from the fulness of Humours, are

1. An excessive quantity of Milk.
2. An abundance of Semen.
3. An exceeding Fatness.
4. A Plethora of Blood.

2. In

2. In the defect of Humors, or an Atrophy, the Pulse is small and soft, both Indicate the Repletion of the Vessels, and the stop of those Evacuations which empty 'em.

These Diseases depend on the defect of Humors.

1. A want of Milk.
2. A defect of Semen in a Sterility.
3. An Atrophy of the Body.
4. A defect of Lympha in Thirst.

3. If the Blood be Tinctured by any hot Cacochymia, or depraved by the Chyle over Digested, the Pulse is great, and quick and frequent, which Indicates the Cure of the hot Qualities; such are the bitter Acrid, the Saltness or Vitriolick Acrid Bitterness in *Atra bilis*) by the Evacuation of the Secretitious Humor, and hot Chyle, and by a diluting Method.

4. If the Chyle be crude, and the Cacochymias cold (such are the pituitous, acerbe and watery *Serum*) the hot Method is Indicated by the Pulse, which is rare, slow and small, and also the Evacuation of the peccant Humor by its natural secretory Glands and Ducts.

5. In all Effervescencies and Fevers, the motion of Humors is violent; and these have a quick and frequent Pulse, which indicates Evacuations and a cool Method.

I. Effer-



1. Effervescences in Ephimeras. 2. Putrid Fevers and Malignant. 3. Causus.  
 4. Intermitting Fevers. 5. Tertians.  
 6. Quartans. 7. Quotidians. 8. Hecticks.

6. In Fluxes the Secretions exceed, and the Pulse is small and frequent, which indicates the stop of Fluxes, and the Cure of the Effervescencies which produce them.

The *Succus Nutritious* is evacuated, 1. By Vomiting. 2. By Diarrhæas. 3. By Urine, in a Diabetes. 4. By too much Sweat. 5. By a Gonorrhæa. 6. By a *Fluor Albus*. 7. By a Ptyalismus. 8. By Coughs and Catarrhs.

7. The evacuation of Blood by Hemorrhages, make the Pulse small and frequent, and indicates the stop of the Flux, after the Cure of the Effervescence or Intermitting Fevers. The Hemorrhages are

1. Bleeding at Nose. 2. The Dysentery, or *Fluxus Hepaticus*. 3. Pissing of Blood. 4. Vomiting Blood. 5. Spitting of Blood. 6. Flux of the Menses or Lochia. 7. Flux of Hemorrhoids. 8. Great Wounds. 9. Frequent Abortions.

8. The evacuation of the *Serum* into the Cavities, produces a small and frequent Pulse; and indicate the stopping the Flux of *Serum*, into the Cavity, or Evacuation of that contain'd there, and the  
 C Cure

Cure of the Obstruction which occasions the Extravasation.

1. In an *Asciter* 'tis collected in the Cavity of the Abdomen. 2. In a *Hydracephalus* 'tis Extravasated into that Cavity. 3. in a Dropsy of the Breast 'tis collected in that Cavity. 4. 'Tis collected in the Membranes of the Cods. 5. In an *Anasarca* it fills the Membranes of the Flesh. 6. In a Tympany 'tis collected betwix the *Peritoneum* and Muscles of the Belly. 7. 'Tis collected in Hydropic Tumors in any part. 9. The Motion of the Blood is obstructed by sily or hot viscid Humors, and the Pulse is quick, frequent and hard, and that indicates Evacuations by Bleeding and a cool diluting Method, as in all Inflammations.

1. The *Aptha* are an Inflammation of the Mouth.

2. *Angina* is an Inflammation of the Throat.

3. *Parotis*, is an Inflammation of the Glands behind the Ears.

4. The Intestines and Stomach or *Anni* may be Inflamed in the Cholick and Piles.

5. The Inflammation of the Liver and Spleen in Obstructions.

6. *Nephritis* is the Inflammation of the Kidneys.

7. *Phrenitis* is an Inflammation of the Brain.

8. *Ophthalmia* is an Inflammation of the Eyes.

9. *Peripneumonia* is an Inflammation of the Lungs on both sides.

10. *Pleuritis* is an Inflammation of the *Pleura*, and one side of the Lungs.

11. *Rheumatismus* is a general Inflammation of the Muscles, *Sciatica* is the Inflammation of those of the Hip; *Lumbago* those of the Loins; *Hemicrania* the Pain and Inflammation of one side of the Head.

10. The Chyle-Vessels and the Glands of the Mesentery are obstructed in Tumors of the Mesentery; and this must have a quick and frequent Pulse.

11. The Secretion thro' the Glands is Obstructed, and this makes the Pulse quick and frequent, as in *Effervescencies* the Obstruction must be opened, and the Effervescence cured.

1. In the Jaundice the Choler is obstructed.

2. In the Pains of the Spleen, the Splenetick Humor or black Blood is obstructed.

3. The Salt *Lympha* is obstructed in the *Serophula*.



4. The Secretion of Animal Spirits, is obstructed in the Palsy, and Apoplexy, and Lethargy.

12. The Excrementitious Humors or *Feces* are suppressed, and then the Pulse is great, quick and frequent, and Indicates Evacuation of them, and the cooling Method for the Ebullition.

1. In an *Ischuria*, the Urine is suppressed.

2. In an *Astrietio alvi* the Stools are stopt.

3. The Sweat is checked by stopping of the Pores.

4. The *Menses* and *Lochia* are stopt by the Obstruction of the *Uterine* Vessels.

5. The *Hemorrhoides* are stopt sometime in those who have naturally those Fluxes.

2. These Diseases happen in the Animal Spirits, by Rarification of them, by external Accidents, or the tincture of them from the hot *Cacochymias*.

1. The Pulse is great and vehement in *Deliriums*, *Mania*, *Vigilia*, hot Winds, and all the hot *Cacochymias*; and in Pains whose Species are, *Cephalagia*, *Cardialgia*, *Cholica*, *Biliofa*, *Odontalgia*, *Otalgia*, *Stranguria*, *Calculus*, *Podagra*, *Arthritis*,  
Scor-

*Scorbutica*, and all great Inflammations, Wounds, Fractures, Dislocations and Passions. And the Pulse in Pains Indicates the Cure of the Rarification of the Spirits, and the removal of the Cause irritating.

2. The great Condensation of the Animal Spirits by the cold *Cacochymia*, make the Pulse small and remiss, as in the *Syncope* and cold *Cacochymia*.

3. The weakness of the Pulse depends on few Animal Spirits, and the strength on plenty, which indicates the same cool or hot Method to Rarify or Condense.

3. These Diseases depend on the Oppression of the circulatory Organs, or their Irritations, and the Pulse is unequal in greatness, celerity, frequency and strength; if the hot Pulse prevails, Evacuations and a cool Method are indicated; if the cold Pulse, the hot rarifying Method.

1. The contraction on the Heart and Lungs makes the Pulse unequal in the Asthma, Convulsions, Histeric and Hypochondriac Fits, and Tremors of the Heart.

2. The Compression on the Brain and Nerves, makes the Pulse unequal in Malignant Fevers, Apoplexies, Lethargies, *Incubus*.

3. The Obstructions in the Nerves makes unequal uulses in Palsies, or the Obstruction of the Blood-Vessels, in *Polypus Varices*, Palpitations, the Oppression of the circulatory Organs must be removed, and the Convulsive Contraction or Obstruction of the Nerves.

CHAP.



## CHAP. IV.

*The Cure of a strong and full or great Pulse in Plethoras, or abundant Quantity of Humors.*

**T**HE great quantity of Blood and Spirits produce a *Plethora*, and they are the immediate Causes of the full and great Pulse, and these Symptoms; the increase of the Flesh and Fat, the distention of the Veins, the ruddiness of the Face, the persiveness of the Breath, the high colour'd Urine, depends on a moderate Circulation, and full a Pulse, in sanguine Constitutions.

\* The external Causes which produce these Pulses are,

1. The great quantity of Diet, of a sweet nutritive Temper, and large drinking of Malt Liquors.

2. The suppression of any Evacuation by Hemorrhagies, Sweating, Looseness, Urine, &c.

3. The Humors are increased by Sleep and Rest, and a sedentary Life.

C 4

4. In-

4. In a cool state of Air, Men feed by increasing the Appetite, and stopping the Pores, and the same is the effect of Cold Baths.

5. Gentle Exercise, temperate Baths, moderate Friction, feed by promoting the distribution of Chyle.

6. Chearfulness, Joy, Pleasure, promotes the moderate Circulation, Digestion, and Distribution of Humors.

The Internal Causes are a sweet Temper of the Humors, and sweet Taste in the Blood, which makes it mix well with the new Chyle.

The Indications from a full and great Pulse, are evacuations of Blood and nutritious Humors, by Bleeding, Vomiting, Purging, Sweating, and by a contrary Regimen, to hinder the breeding of too much Nutriment.

1. By avoiding all sweet nutritive Diet, as Ale, plump Animals, full Feeding, eat once in a Day, fast often, use much Exercise, frequent hot Baths, drinking hot or cold Water much, extenuates Cares, Watching, Venery, a hotter Air, Exercise, Fasting, strong Frictions, Meditation is the Exercise of the Mind; use Frictions with Nitre and Salt, and ruff Cloaths, hard Bed, much Business, and Sad-

Sadness and Anxiety make lean, use the *Hummums*.

2. We must use these alterative Tasts in a Diet and Medicines which change the sweetness of the Blood, and evacuate the Chyle, as

1. The Acids, sharp Wines, drink Vinegar or Verjuice, and Water in a Morning, Rhenish, Cyder, stale Beer, Elder-Vinegar, one Spoonful in a Morning, or Squill-Vinegar, or Crab-pause, a Draught of Vinegar and Pepper.

Take a Spoonful of *Cremor Tartari*, with Ginger and Sugar, in Water in a Morning.

2. A very great use of Bitters, as hopt and Wormwood Drinks, Theas, of Bitters, Coffee, Pine Ale, Juniper Ale, Gentian Winds, Ashwood in Beer, and Elder Flowers; 3i of Ash-seed powdered, decoction of *Guicam*, *Elixir Proprietatis*, *Theriaca*, at Night eat bitter Almonds.

3. Acrids as Cresses, Mustard, Cabbage, Garlick, Onions, Horse-Radish, Rue-seeds, Nettle-seeds.

4. The acrid Aromaticks, as Parsly or Fennel-Roots in Broth.

5. The Salt Diet and Pickles of Capers, Salt-Fish, Anchovies, Nitre, Tartar Vitriolat, *Arcanum duplicat*, which are *Saiso Acids*, Salt of Vipers.

6. Sli-



6. Slimy oleracious Fruits. and Herbs of little Nutriment, as Blites, Lettice, Purslane, *Asparagus*, Cucumbers, Apples, much Bran in Bread, Oat or Barly Bread.

7. A dry Diet of Roast and Boiled Meat, Birds, or the Smoaked, and Spiced, and Potted Meats, old Animals, hard Meats, Styptics, *Viper*-powders.

8. A Watery Diet, as Whey, drinking Physical Waters.

The Extenuating Diet is suited to the *Plethoric* State of Humors, vehement and quick Running is commended, for which the Antients prepared by Friction to redness, then anoint with discutient Oyls, Bathe and Anoint again with the same, and Bathe again, and Sleep after the hot Bath; before Eating use White-Wine and Water for Drink.

If the Strength be great, and the Fulness also great, we must Evacuate *ad Animi deliquium*; but all great Evacuations are dangerous in the cachectical, and in weak Strength, in these Evacuate by degrees.

Extream Fulness and extream Evacuations are alike dangerous.

A thin accurate Diet is more dangerous than a fuller.

The more we nourish impure Bodies the worse are their Diseases.

Nei-

Neither Fulness or Emptiness, nor any other thing is good, which exceeds Nature's quantity.

The Fat live a shorter time than the Lean, because much Fat hinders the Circulation of Humors, and that makes 'em subject to Apoplexies, Palsies, Inflammations of the Lungs, Syncope, ill Fevers, because they have small Veins, minute Heat and poor Spirits; they are subject to Obstructions, Asthmas, Dropsies, and their Flesh feels cold, their Strength weakned, Skin smooth; a disposition to Feeding from the Parents cannot be cured, but an acquir'd Fat Habit may.

Bleeding feeds some, by abating the exceeding Heat and violent Circulation, and the new Chyle is sweet, which supplies the loss of acrid and salt Blood.

Use *Aluminous*, *Sulphurous*, and Sea-Baths, in Women, procure the Menstrual Flux.

The fulness of any Secretion must be cured by Evacuations, and Tastes contrary to it, as too much Semen, Milk, Serum, Choler, Lympha.

In *Plethorics*, the Fever usually ends by Hemorrhagies or Convulsions, the Face is very red, and the Hypochondria full, and the Pulse very high.

Bitters, Acrids, Salt and Aromatick Tastes, cause the moderate Pulse in *Plethorics*

*thorics* to exceed, and the watery, slimy *Acerbes* and *Acid* occasion a deficient Pulse, and either way we may alter the Pulse of *Plethorics*, as well as evacuate the abundant Nutriment. If the hot Regimen increases the Fat, we must use the cold, and *e Contra*.

---



## C H A P. V.

*The Cure of a weak, soft, empty Pulse, depending on the defect of Humors in an Atrophy.*

**T**HE languid Spirits make the Pulse weak, the small quantity of Blood makes the Pulse feel soft and empty ; on these Pulses all the Symptoms depend in an Atrophy, as loss of Appetite, loss of Flesh, weak Motions, Faintness, and at last hectic Heats. The Causes of the small quantity of Spirits and Blood, and Chyle are,

1. A long Abstinence, or ill Diet of hard, salt, dry, watery Meats, which yield little Chyle.

2. In old Ages and dry Tempers the Appetite is wanting, the Digestion and Circulation are weak.

3. The nutritious Humors are evacuated by a Diarrhea, *Fluor Albus*, Coughs, Lactations, Venery, Exercise, Watching, Passions, hot Air, Salivation, Hemorrhagies,

gies, strong Liquors, Ulcers, Diabetes, Dropsies.

4. Whatsoever Causes evacuates the *Succus Nutritius* any way, or hinders its due quantity and preparation by Digestion, and Circulation, or its Distribution and Assimilation, produces an *Atrophy*.

The Cure is by filling the Veins, and supplying a greater quantity of Spirits.

1. We must use the feeding Regimen to Sleep much, lie in soft Beds, live Idle, to Eat and Drink well, to be well Cloathed, to Ride moderately, to live at Liberty, and follow Diversion, which Observation, *Cesar* confirms by this Remark on the *Suevi*, *Quævis & cibi genere, & Quotidiana exercitatione et Libertate Vita quod a pueris nulla Officio aut Disciplina assue factis, nihil omnino contra voluntatem faciunt, & Vives alit, & Immani Corporum Magnitudine Homines efficit.* Moderate Friction, cool Air, serenity of Mind, binding of the Body, help to feed, and Cold Baths; these Meats breed much Nourishment.

1. A Milk Diet, Womens Milk, Cows Milk, or Goats, or Mares, Yolks of Eggs, beat the Yolk of an Egg with Rose-Water 3 Spoonfuls, mix it with Cows Milk 1℔s. Sugar of Roses 3ss. and some Nutmegs, take it for a Month fasting.

Give

Give Asses Milk steeled if Loosness be fear'd.

Go into a Bath of warm Water before the Asses Milk.

2. The Flesh of young Animals and their Broths, Chicken, Veal, Lamb, Pig, and Flesh Jelly, and Gravies, Eggs with Wine and Water, the Feet of Pigs boil'd in *Ptyfanes*. Boil 12 Craw-Fish in Broth; these Creatures are very Nourishing, Partridge and Capons, Mutton and Turkey, Pig or Blood distill'd nourish little; the sweet Fish, as Crabs, Lobsters, Tortoise, Crawfish, nourish much.

Pound the Tails of Crayfish with Almonds, Barley and Sugar, or boil Capons and Crawfish, boil Cocks Stones in Milk, boil Frogs in Capon Broth, use the Mucilaginous Broths, of Veal, Fish, Pig, Snails, Frogs, make nourishing Glysters of Broths, Milk, Sack, Yolks of Eggs.

2. The sweet Diet of Fruits, as Raisons, Figs, Dates, Malago Wine, Canary, Ale, sweet and not bitter Decoctions, of Barly, Raisons, Liquorish, mixed with Milk for Drink, or Decoction of China and Raisons, or Dates.

4. The Mealy Diet, White Bread, Puddings, Rice, Wheat or Barley boiled in Chicken Broth.

5. The Oily Diet of Almonds, Chocolate, fat Meats, Cream, use Baths of warm Water



Water, in which Almonds and Barly are boiled, and after them drink Milk or Jelly Broths, or Egg and Water, Nutmeg and Sugar: Baths of Oil and Water to Relax the Skin, which is dry and wrinkled, and Unction is used after a Tepid Bath, or that of Sheeps Trotters and Heads, or of Milk and Water, twice in a Day.

Swimming in the Sea, change of Air and Navigation is commended in Consumptions, and Cold Baths for the Hæctic.

We Bathe after Meat, if the whole Body be emaciated, but if a part foment it, and use Friction or Pication till the part swell.

Boiled Meats Nourish more than the Roast, and our Diet ought to exceed all Evacuations.

Riding after Meat Feeds.

We must avoid all the extenuating Diet and Evacuations, and Cares, and to indulge Joy and Pleasures.

The want of any secreted Humors must be supplied by a Nutritive Diet, of the same Taste.

The Wound of an Artery, Nerve, or their Compression by Luxation and Fractures, or Palsy, or great Fluxes of the *Synovia*, produce a particular *Atrophy*, for which we use Oil of Worms and Amber, Cupping and Rubbing.

Take

Take Angelica Roots ʒiii. Sage, Rosemary, Lavender each Mi. Salt of Tartar and *Sal Armoniac* each ʒiij. infuse it in Spirit of Wine for a Fomentation.

*Hartman* advises a Vomit of *Aq; Benedicta*, the exciting the Appetite by *Tart. Vitrioli* dissolv'd in a Decoction of Raisins and Cinnamon, a Bath of Sheep's Head and Milk, and Water.

Milk Diet and Uction of the Spine, with Spirit of Ants, and the same inwardly.

Those Bodies which are extenuated by a long Disease, must be slowly Nourished, and they who are suddenly extenuated, must be quickly nourished.

If a Person is not nourished who eats well, 'tis a sign he eats too little, or wants Purging, and the altering of some Cacoehymia, or will relapse into a Disease.

*Alpinus* observes, That he fed in *Aegypt* by Water-drinking, who was before very thin, and hot.

Use a Tepid Bath 'till the Habit swells thrice in a Day, and give after Asses Milk or Broths, use Friction 'till Redness, and after Uction with Oil of Violets or Water-Lilies, feed thrice in a Day, and use Gestations, and Walking, use the Broth of a Hen, and put Almonds into her Belly, and Pistachia's; this Broth the *Agyptians* used to feed ther Women with in a temperate Bath of Milk.

The Heat must be remiss, and the Parts cold, otherways, the Fat will not coagulate in the Body, but perspire.

In an *Atrophy* from Evacuation, we stop the Flux, and all Purging is injurious, then cure the hectic Heat and sily Humors, by Milk, Mineral Water, Sarsa Drinks, one spoonful of the Muscilage of *Gum Tragacanth* with Sugar cures the Looseness, and half a dram of *Sal Armoniac* excites the Appetite.

In some *Marcors* where there is an inward Inflammation in the Lungs or Stomach, or other Viscera, the Pulse is small and frequent; but if the *Marcor* be without Inflammation, the Pulse is rare, as in old Men, much decay'd.

*Note*, That a particular *Atrophy*, is from a defect of Circulation, into any particular Part; but the general Circulation may be good thro' the rest of the Body; a perfect, full Circulation, is when the Blood moves equally in all Parts, but there may be divers degrees of Velocity in the same Circulation.

1. The Blood may move slowly thro' the Iliac Arteries, but regularly in the other Arteries, and this is the first degree of imperfect Circulation.

2 The Blood may move slowly in the Arteries of the *Abdomen*, but regularly in other Parts,



Parts, and this is the second degree of imperfect Circulation.

3. The Blood may move slowly thro' the Arteries of the *Pleura*, and this I make the third degree of imperfect Circulation.

4. The fourth degree is when the Blood moves slowly through the Head, as in sleepy Diseases.

*Note*, That this defective Circulation produces in the first degree smallness in the Legs, in the second want of Appetite, in the third Leanness and weak motion in the Breast, and in the fourth *Atrophy* of the Eyes, and defect in all the Senses.

---

## C H A P. VI.

*The Pulse in the Ephemera out of  
Galen's first Book of Fevers, Chap.  
VIII.*

**T**HE Pulse in *Ephemeris* is great, quick, frequent and equal; and he observes, that the *Systole* does not increase in Celerity, but the frequency is not proportionable in the external quiet, (that is, the frequency is less in *Ephemeris* than putrid Fevers, and it is not proportionable to the Greatness and Celerity.)

In Cares, Watching, great Exercise, the Pulse in the *Ephumera* is less.

In *Diary* from a *Bubo*, the Pulse is very great, quick and frequent.

The Causes of these Pulses, are the Rarification of the Blood and Spirits, and a hot Wind or Fume, which is produced by that Rarification.

This Rarification occasions the Circulation to run very fast, and that produces the mild Heat, Thirst, Pains of the Head, frequent Respiration and Lassitude.

The Symptoms from the rarified Spirits, are want of Sleep and Restlessness.

The

The continuance of this quick and frequent Circulation, prepares the hot Fumes for a critical Expulsion in 1, 2 or 3 Days, by Sweat or Perspiration.

These evident Causes produce the Rarification in the Blood and Spirits, as Anger, Sadness, great Exercise, Pain, Hunger, great Evacuations, hot Diet, Surfeits, heat of the Air, Fire, Baths, stopping the Pores, or other Evacuation, or Obstruction, Inflammations or Suppurations, Tumors and Plethora, all these irritate the Pulse, and accelerate the Circulation.

Since the quick and frequent Pulse depend on a great Rarification of the Humors, by the Causes mentioned: they Indicate,

1. The removal of the external Cause.
2. We use Bleeding and Glisters, and all the cool Regimen, to alter and temper the Rarification of our Spirits and Blood, and to stop the irritated Circulation.

3. The Evacuation of the hot *Perspirabile* must be procured to hasten and help the *Crisis*, by the old *Galenic* method of tepid Baths, moderate Friction, Unction of Oil, a Friction afterward in the Bath, and after all cold Baths, to wash in. The old Doctors repeat the Bathing, Unction, Friction, Immersion, and Deterfion in cold Water twice in the same Bathing, and then gave them the *Ptyfana*, after they had taken a Glas of warm Water,



when they came fresh out of the Bath. By this Method *Galen* cured the *Ephimera*, from Perspiration stopt, Watching, Anger, Cares, external Heat and Cold, and lassitude; but he did not use the Bath 'till after some Declination or Remission of the Feverish Heat; and he used this Bathing the 1st day at Evening, or on the 2d or 3d of the *Ephimera*; and he us'd a soft Friction, and in great Obstruction of the Pores, Soap, or Barley, or Bean Meal, or *Nitre* and *Aq; Mulsæ*.

We must use these Tastes in Diet and Medicines against the Fervor of Humors, which produce the quick Pulse.

1. The Diet must be Thin and Humid; such are the Slimy Meats, *Ptyſanes*, *Panados*, Water-Gruel, Small Beer, Emulsions, Tare Posset-drink, Lettuce, Endive, Purslane, Borrage boiled in Chicken Broth, Milk Waters, Whey, Liqueurish Water, to this add *Sal Prunella*, *Niter* or *Sal Armoniac*, or *Tart. Vitriol.* ℞ii or 3i.

2 Acids, Barly Water and Syrrup of Lemons, Barberies, Currains or Syrup of Verjuice and Water, Decoction of Pippins, Pruens, Barberies, Tamarinds in Barly Water, Spirit of Sulpher, Vitriol, Gas Sulphur, Tincture of Roses, or infuse Acid Conserves or Robs in Water, 6 spoonfuls of the Juice of Sorrel in Posset-Drink, or boil Dandelion,  
Wood

Wood-sorrel, Plantane in Posset-drink, House-leek Posset-drink.

3. The Styptics and Acerbes stop the irritated Circulation; Plantain Mij. boyl'd in Posset-drink;  $\mathfrak{h}\mathfrak{j}$ . Cinquefoil, or Tormentil Roots in Decoction or Powder.

The Acids, Acerbs and Styptics, precipitate hot Humours, and are most proper in the beginning of Effervescencies; but in cold Tempers, and at the end of Fevers, the hot Tastes are most proper, as Salts, Bitters and the Calces, to help the Separation and Secretion of Humours; the falso-Acids are best for mix'd Humours; the hot Tastes restore the Mixture, and Secretion, and Circulation.

4. Opiates are necessary to compose the hot Spirits, and stop the Circulation.

All the Effervescences of Humours which produce the Gout-pains, Convulsions, Hemorrhages and Catarrhs, must be cur'd by the same Evacuation, and cool Alteratives abovemention'd, and by Water-drinking.

In a Continent-Fever, *Galen* describes [*the first Book of Fevers, Ch. XIII.*] the Pulse very quick, frequent, and great; but this he distinguishes from a Hectic, because in that the Pulse is smaller, more rare and slow

than in a Continent, where the Heat is continually great, but in Hectics 'tis so chiefly after eating; and the Hectic succeeds either burning Fevers or Ephemeræ, and in a *Hectica Marasmodies* the Pulse is small, weak, hard and frequent, and there is a putrid Fever join'd with it at last.

The quick, frequent and great Pulse indicates the Bleeding *ad animi deliquium*, which produces Vomits, and Stools, and Sweats, and drinking as much Water as the Patient pleases, in a *Causus*, which is very cooling and useful, after the Signs of Evacuation: cold Baths also cool the *Causus*, after sufficient evacuation by Bleeding.

The *Causus* has a greater Rarification of Blood than the *Ephemeræ*, and thereby it differs from it, as appears by the Pulse, in itching and burning heat, and extreme Thirst, Phrenzy; the *Ephemora* ends in a Sweat, and the *Causus* by Sweat, Urine, Purging or Bleeding.

The Diet in both must be thin and humid, and we must abstain from all things which rarifie the Humours, as fermented Liquors, Flesh-meats, which heat by their saltness; Milk and Eggs are apt also to ferment and putrifie in Fevers.

After Concoction of Humours, a tepid Bath is the best Remedy, tho' the Fevers be putrid; and the same are proper for Hectics, till the Inflammations and putrid Fever hinder



der it : These Baths, Sleep on a soft Bed, and moist Nutriment, prevent the want of ferous Nutriment in Hectics.

The Diary Fever turns into a Continent without Putrefaction, if the hot Fumes do not perspire in 4 days, and the Pulse is quick and frequent, great, vehement and equal : but if the Continent Fever continue, it turns into a Putrid, as appears by the unequal Pulse, extreme Heat, and turbid Urine.

Diary Fevers oft turn into the putrid or the Continent with Putrefaction, as well as into a Hectic.

After a Continent Fever without Putrefaction, which was cur'd by bleeding, *ad deliquium animi*, Galen bathed the Patient.

In another Continent Fever with a *putredo*, he bled, *ad animi deliquium*, and the Fever decreased every day ; the Signs of the *putredo* do appear on the 1st, 2d or 3d, and sometimes on the 4th day : This profuse Bleeding is proper for young and strong Patients, because it effectually stops the Pulse ; bleeding spontaneously oft cures these Fevers, for which reason we ought always to bleed ; and much bleeding, and drinking Water, are the chief Remedies of Continent Fevers ; and *Galen*, in Book XI. of his Method of Cure, advises to bath in cold Water in Continent Fevers, after the Signs of Con-

Concoction, which will promote Sweat and Stools; this is to be us'd in a hot time of the Year, and in a good Circulation, but not in a cold Season, and great Weakness of Pulse and Circulation, nor when the Signs of Concoction are wanting: In weak Pulses a tepid Bath, drinking of Wine, and attenuating Unctions are best, but never without Signs of Concoction.

The Indication from Fevers requires cold Water to cool it; the cooling alterative Tastes and Evacuations which accidentally cool and stop the Pulse, the Evacuations evacuate the putrid Humours, the Alteratives prevent more Putrefactions, which the Obstruction of the secretitious Humours occasion: The Causes of the Obstructions are, multitude of Humours, which require Evacuations; the thickness requires attenuating Medicines, the Viscosity Deterfives: Thus we cure by contraries.

In the cure of putrid Humours, we must procure the Excretion of the Humor retained, as the perspirable: The cooling of the Effervescence, and the Ventilation by Perspiration, and the Concoction of the Semi-putrid Humours, by promoting the Circulation.

The Cholera and *Pituita* are best evacuated by Vomiting and Purging the *Serum* by Urine; the *Viscera* by helping the Circulation to the Spleen and Brain; the  
Lungs

Lungs by Pectorals, tepid Baths diminish the Quantity of Humours, and help the Secretion of the hot perspirable, and all other Humours, because they relax and dilate the Passages; but not to be used if any of the *Viscera* are ill, and the Body un-purged; but 'tis most convenient in the end of Fevers, which old Practise is forgot.

---

C H A P.



## C H A P. VII.

*The Pulse in the Tertian is great, vehement, quick and frequent, without Inequality but that of a Fever.*

THE Pulse is a little slow and rare in the beginning of a *Tertian* Fit, which occasion the extreme rigour, but as it grows vehement, it occasions Head-ach, watching, deliria, by rarifying the Animal Spirits.

The Night before the Fit is worse than that after, because the quickness and frequency continue during the intermission, and are worse before the Fit.

The rarification of the Blood produces Heat, Thirst, Bilious Vomits, and Sweats, and Bilious Urine.

The ebullition in a Bilious Blood produces the vehement Pulse, which must be cur'd by evacuating the Bile, and curing the Effervescence by Bleeding, Vomiting, Purg- ing, and Sweating, and by tepid Baths, as soon as the signs of Concoction appear; and then the Old Physicians gave thin Wines, the decoction of Wormwood purges, and cool and diluting Dier.

The

The Fits of an exquisite *Tertian* lasts but twelve hours, because of the quick circulation, and the Urine has signs of Concoction on the fourth day.

The *Tertians* lasts 5, 7, or 9 Fits at most, the quick circulation prepares the Bilious Serum for a Secretion in that time by Stools; all specifick Tafts against *Tertians*, are,

1. Acids, as Spirit of Sulphur *gut.* ten or twenty in Water, Creme of Tartar 3j. in Chamomail-flower Posset-drink, juice of Sorrel or Lemons in Wine and Water.

2. Salso Acids, as Juice of Limons and Salt of Wormwood.

3. Bitters, as Wormwood, Featherfew, Chamomail-flowers, Germander, Vervain, decocted and given with Myrrh 3fs. or Mithradate 3j.

4. The Stipticks to stop the Pulse, as Alom, Plantane, Polygon, Avens, Cinquefoil, Tormentil, the Cortex.

The Acid and Salso Acids precipitate the Bile, the Bitters open obstructions in the Liver.

The Pericarpia are of Acids, Acerbe, Opiates, Salso Acids, all which stop the Pulse.

The burning Fever differs from the *Tertian*, by wanting a rigour in the beginning, the circulation is not stopt or oppress'd, neither has it any intermission, and a greater heat,

heat, but the Pulses are alike ; the vehement Symptoms in a Causus are fatal, and several indications, if they happen, are signs of a long Disease.

The several types of intermitting Fevers or Agues, depend on that secretitious Humour which abounds in the Blood ; and the quantity of that oppresses the Blood and Spirits in the beginning of the Fit, and stops the circulation, and that occasions the rigor, but at length a febrile Evervescence succeeds by the Acrimony of the secretitious Humour, which stimulates the Heart to a quick and frequent contraction.

The Pulse in the *Quartan*, in the beginning of the Fit, is very rare, and slow in the rigour, but in the height of the Fit, quick and frequent, but not so much as in other Fevers.

The Old Writers observe, that the inequality in one Pulsation is most evident, being more quick in the beginning and ending, than in the middle ; this is not sensible to me, I leave it to better Artists.

In the intermission of the Fit, the Pulse is more slow and rare than in other Fevers ; I have counted 80 beats in the intermission in a minute, in a young Man, in the Autumn ; the reasons of the slowness is the melancholic grumous Blood, and this happens oft with obstructions of the Spleen.

In



In the Fit, the quick and frequent and small Pulse direct us to these indications.

1. To cure the feverish Ebullition by Bleeding, Glysters, and Purgings.

2. To help the small Pulse and grumosity of Blood by Vomits, with Asarum by Friction, tepid Baths, Steel, Bitters, and a more cordial Diet of Flesh-Meats.

In *Quartans* the Urine is pale and white, the Pulse small and slow, which are signs of indigestion in the Humours; and the grumous Blood requires a long time before it can make any separation or crisis, it usually lasts a Year and cures other Diseases.

No hot Medicines must be given till the signs of Concoction appear, because they turn the *Quartan* into a continu'd Fever and kill.

The hot Digestives or Febrifuges are,

1. Bitter, decoct. Amarum, Wormwood Wine, *Elix. Propriet.* Myrrhe, Treacle.

2. Fixt Salts, Chalybeats.

3. Stypticks for to stop the Fits, as Plantane, the Cortex, Alum.

4. Opiates stop the Fits, and the Pericarpia of Stipticks, Acids, and Caustics, mixed as Nettles, Ranunculus.

5. The

5. The Cardiac Acrids and Diaphoreticks, as Serpentaria, Zedoary, Ginger, Contrayerva, Pepper.

6. The foetid Acrids, Rue, Medicines of Vipers, or Asa foetida, which is Galen's Medicine, Diospoliticon.

7. Strong Vomits of Hellebor, or strong purges at last, or bitter Purges four hours before the Fits, after the continuance of the Ague six Months when the grumous Humour is digested.

The Pulse in the *Quotidian* is less than in the *Quartans*, as the Pulse in the *Quartans* is less than in the *Tertians*; and the Pulse in the *Quotidians* is more rare than in the *Tertians*, and they are slow as in the *Quartans*.

The Blood and Spirits are less rarify'd than in the other, and the Heat more temperate, they have petuitous Vomits and more crude Urine, because the Pulse is more slow and unequal in *Quotidians*; these Fevers end not in Sweats nor perfect remission; this crudity of Humours makes the Disease to last 40 or 60 Days, and it oft ends in Dropsie or Hætics, and in *Quotidians* there is Coldness but no Rigour.

The Pulse in the *Quotidian* being slow, rare, unequal, indicate the raising of the Pulse by Vomits, strong Purges, with Dia-

gridium

gridium and *Creme of Tartar*, and sweating with Chamomail-flowers.

The Specifick Febrifuges are,

1. Bitter Acrids, as in the *Quartans*.
2. Fix'd and Volatile Salts.
3. Aromatick Acrids.
4. The Stipticks, as the Cortex, with Opiates.
5. The Pericarpia must help the Pulse and Circulation, as Camphire, Soot, Galbume Onions, Turpentine, Saffron.

When the Fever happens in weak, rare Pulses, the *Quotidian* Fits are produc'd.

In intermitting Fevers we must reckon the Fits, and not by Days; the fourth Fit of a *Tertian* will shew whether the Crisis will happen on the 7th, and the 15th Fit in a *Quartan* is the Index.

The Pulse in continued Fevers in small, slow, and weak, rare in the beginning, but in the hot Fits, greater, stronger and quicker, and more frequent.

A Fever is an unnatural acrid Heat, depending on the frequency of the Pulse; this notion was long since started, as *Galen* testifies in his Book called, *The Introduction*, where he says the Neoterics had the definition of a Fever; *Galen's Hæmetritæus* is our intermitting Fever, and was common at Rome in his time, and he thought it a

E

mix-



mixture of a *Quotidian* and *Tertian*. The small, slow, rare Pulse produces, in the beginning, trembling, sleepiness, giddiness in the Head, lassitude, coldness in the Extremities, faintings, pains at the Stomach, looseness, cold sweats; but as the Pulse grows quick, great, frequent, a Deliria, Vigils, Pains, Hemorrhages, Thirst, burning Heat, Inflammations, Flux, Coughs, are produc'd. In this state the Pulse is most vehement and quick, and frequent; but in the declination of the Fit, less quick and frequent, till it returns to a lower state than by the Pulse we distinguish the several times of the Fits.

When the Fever begins with our Rigor, or Coldness, or Vomiting, the Pulse is great and quick at first, and in the increase very frequent; but the flux of Humours to the Stomach makes the Pulse unequal, and languid in the beginning of the Fit.

In all putrid Fevers the Pulse is very quick, and this is the true sign of it, Fits coming as well in the small and low Pulses.

In a continued Fever there is the same Pulse as in the intermitting, but after the Fits the Pulse only remits, but continues frequent.

The feverish, high, and frequent Pulse requires Bleeding, and Glysters, and a cool moist Diet, and the Pulse must be stopt by Stip-ticks,

ticks, as the Cortex, and Opiates, by which we procure an artificial Crisis.

The most fatal signs in Fevers are weak Pulse, short Breath, by which we discern that the Circulation is weak, and a Delirium want of sleep causes Convulsions, by which the Animal Spirits are diverted from managing the Pulse and Respiration.

An abscess is to be expected, if the Fever lasts above twenty Days, or ceases, without a Crisis, or else Pains in the Limbs.

---

## C H A P. VIII.

*The Pulse in a Malignant Fever is thus describ'd by Zecchius, Pag. 423. Consult.*

**P**ulsus imprimis parvus & languidus ob spirituum vitalium resolutionem à maligno venenataq, Aurâ frequens usu facultatem sollicitante ad reparanda, spiritus, qui assidue dissipantur, inequalis putredinis causâ, durus ob arteriarum siccitatem.

In a Malignant Fever, with *Peripneumonia*, the same Author observes, that the Pulse was soft, small, languid, unequal and very frequent, because of the destruction of the Spirits by the venenate cause of the Fever, which was Epidemical; and in this case, the small, languid, unequal Pulse indicates the *Bezoardia* and Blisters to help the Circulation, and to expel the pestilent Cause of the Disease.

The small and languid Pulse will admit of no great Evacuation by bleeding or purging; but the unequal Pulse, which depends on the Inflammation of the Lungs, requires bleeding a little by the Lancet, and sometimes by Cupping, as *Galen* practis'd in Malignant Fevers, and a gentle Clyster. The



The Symptoms depending on the quick, frequent, unequal Pulse, are, a mild heat, cold Sweat, thin Urine, frequent Horrors, a weight or lassitude in the Limbs, Fluxes by Stool or Hemorrhages, Tumours behind the Ears, or in the Groin, and the *Petechia*; all these depend on the want of a due Circulation, to rarifie the Blood, and expel the venomous Matter which oppresses the Blood.

The Symptoms from the Oppression of the Animal Spirits by the infectious Air, are, Weakness, Anxiety, Vertigo, Tremor, Convulsions, Deafness, dim Sight, Sleepiness, Delirium or Watching.

Since the Circulation is too weak in Malignant Fevers to make any Crisis, we must help it by Alexipharmics, and Blisters, and gentle Vomits at first, Cupping, and a moderate Cordial Diet.

If the *Petechia* be critical, we must not bleed, but if they be symptomatical, and some accident require bleeding, we may bleed, after they appear; but 'tis safer to bleed before they appear: But in a Malignant Fever, we must first respect the oppression on the Blood and Spirits, because that stops the Circulation, and after that is reliev'd, we must cure the frequency of the Pulse, as in other Fevers, and those Inflammations or Defluxions which are Symptoms of the malignant Fever; we cure the Oppression by evacuation of the Cause which occasions

it, as by Bleeding, Glisters, Vomits, Blisters, and acrid Diaphoretics, mix'd with Acids in the beginning, and with Opiats in Deliriums and Watching.

When the Pulse is greater and stronger, the Oppression is cur'd, and the Infection expell'd.

The Pulse becomes hard when a Pleurisy attends a Malignant Fever, and it becomes tense before Convulsions.

A Malignant Fever is produc'd by the translation of the feverish Matter to the Brain in an intermitting Fever, and then the Pulse is small, weak and frequent, because the Nerves are oppressed by the Blood, which stagnates in the Brain.

All Malignant Fevers are in their nature Intermitting Fevers; either being with great oppression of the Circulation in the beginning of the Fever, for want of a due rarefaction in the Blood and Spirits; or else in the end of an Intermittent, when an ill Crisis throws the feverish Matter on the Brain; and after the Oppression is remov'd by the Alexipharmics, such is the use of Treacle-water to some Pints, or *Venice-treacle*, volatile Salts, then the *Cortex* will take place for the Fever; and when the Matter is transfer'd to the Brain, bleeding in the Neck, Blisters, Glisters and Alexipharmics are most useful, but the *Cortex* can have no effect, when the Blood stagnates in the Head.

The

The greater the Pulse and natural Heat is, the greater is the Heat in Malignant Fevers, which corresponds with the natural Heat, and not with the Putrefaction.

A Fever join'd with excessive Heat is also a Malignant Fever; and then the Pulse is exceeding great, strong, very frequent, and then requires great Evacuations, and cooling Alteratives, as in a *Causus*.

*Langius* describes the Pulse in the Plague *exilis* and *imbecillis dispari motu, tempore distolen & systolem metitur*: By this unequal, small and weak Pulse the old Writers observ'd, that the Heart was affected, that is, the Circulation stop'd, by the infectious vapour of the Plague, which is more poisonous than any ordinary Putrefaction; and since it is externally sent into the Blood, it ought to be expell'd, before it has dissolv'd the viscid Blood.

The Pulse in the Plague, which is the most Malignant Fever, is very weak, small and frequent, with the greatest inequality and oppression.

The Languor and Inequality of the Pulse are Signs of an oppressed Circulation, and that the danger of its sudden stopping by the coagulate putrid Blood, the venomous foetid Vapor in the Air gets into our Body, and insensibly by agitating the aereal Spirits of the Blood, produces a Putrefaction in the viscid parts of the Blood, whereby they are



coagulated, and the aerial Spirits cannot be detain'd thereby, that the animal and vital Spirits are evaporated, and the coagulate Blood stops the Circulation and oppresses it, from whence Faintness, the Heat is little, but an inward burning, *nausea*, cold Sweats, Anxieties of the Heart, Carbuncles, Bubospots in the Skin; all which Symptoms depend upon too slow a Circulation of the infected Blood; the Putrefaction is evident by the *Fator* of the Breath and Excrements.

The Pulse in the Plague is weak, because the Animal Spirits are destroy'd by the foetid poysonous Vapour which infects them, as the Spirits of fermented Liquor are by Thunder; and thus the Plague affects the Heart, that is, it weakens the Circulation.

The Pulse is small for want of Vital and Animal Spirits to move the Heart, and for want of an Effervescence in the Blood.

The Pulse is frequent, because the infected Blood stimulates the right Ear of the Heart continually, to expel the poison'd Blood by a frequent Circulation.

If the Circulation cannot be irritated to a greater degree of Velocity, the Person infected dies suddenly, without a Fever, or any critical Evacuation, or frequency of Pulse.

If the Circulation can rise to a greater frequency and celerity, the Infected is sav'd by profuse bleeding, by plenty of thick Urin or Sweat, or by Tumours which are either Carbuncles or Bubos. If

If the Circulation be too weak, slow or rare, to make its Crisis, as is describ'd, the venenate Blood tends to the Head, and occasions a *Sopor* or *Parais*; if the Blood be very acrid it causes Pains, or *delirium*, Watching, Noise in the Ears, Blindness, if the venenate Matter tends to the Stomach, it occasions Nauseousness, Vomiting, Fluxes, the Humours which are acrid and adust produce a Carbuncle, which are salutary, if big enough, and these also cause *Phlyctenes*; the Bubo's contain a thicker Matter, which fixes in the Glands of the *axilla* or *inguin*: so some Crises are by Flux of the Belly, or by bilious Vomits; or else that poison'd Blood sticks in the Skin, and produces Spots or Blotches, which are fatal.

By the strength, greatness and frequency of the Pulse, we may discern, that the Circulation can expel the infected Blood.

By the weakness, smalness, and great inequality of the Pulse, we may judge, that the Circulation cannot expel the poison'd Blood, and they die before the fourth day, or on it.

By considering the weak, small, frequent and unequal Pulse, we discover their Causes to be a Languor, or Oppression on the Spirits, and a putrid Blood, which irritates the frequency: the languid Spirits indicate Cordials, and the putrid Blood indicates its expulsion by an accelerated Circulation, which

the effect of Alexipharmics: by the curing these Causes of the Morbific Pulse in the Plague, we cure the Disease.

Nature shews us the Method of Evacuation of the putrid Blood, by Tumors in the Skin; if the Bubo be small, they usually die on the 2d, 3d or 4th day, because it cannot make a full *Crisis*; the Method by which Nature evacuates the putrid Humour, is, by exciting a feverish Effervescence; and this being very little in fatal Cases, hath been the occasion that some Authors affirm, that the Plague is without a Fever sometimes.

The Tumor of a Bubo must be increased by a Cupping-glass with a Flame, and Scarification, or Leeches, or Blisters; and the venenate Matter being attracted, must be ripen'd by Pulveres, and opened by the Lancet or Caustic, &c.

The Carbuncle is an inflam'd burning Tumor, red in the bottom, black above the basis, and a Blister on the top; 'tis a fœtid, hot, painful, contagious Tumor: This, as well as the Bubo, is fatal; the lesser the worse, but if many and broad, they give more hopes.

The Tumor must be cut open, or a Caustic apply'd to discharge the Humour expelled.

The *Crisis* of the putrify'd Parts of the Blood, ought to be help'd by promoting the Circulation.

These



These Tastes preserve from Putrefaction.

1. The bitter Acrids; as Scordium, Rue, Carduus in Wine or Tea, or Vinegar, or Rue-juice made into a Syrup with Vinegar and Sugar, Conserve of Tanſie, or Wormwood and Wood-ſorrel and *Diaſcordium*, *Elixir Proprietatis cum acido*, chew Myrrh, take Treacle-water ℥j. Venice-Treacle ʒij. Syr. of Lemons ʒiv. mix them.

2. Acids; a Spoonful of *Bezoardic* Vinegar in a Morning, or a potch'd Egg, with Elder or Rue Vinegar, *Spir. Nitri dulcis* in Wine, Juice of Lemons in Broth or Water, Rue Vinegar with Bread and Butter, chew *Zedoary* or *Angelica*-Root ſteep'd in Vinegar, make a Poſſet-drink with two Spoonfuls of *Bezoardic* Vinegar, impregnate Sugar-candy ʒiv. with Spirit of Salt ʒj. waſh the Mouth, Face and Hands with Vinegar and Roſewater

3. By Aromatics and Fœtids; but they offend hot Conſtitutions; as Camphire, Sulph. Saffron, Ambergrease; theſe may be beſt infuſed in Vinegar, as *Zedoary*, *Angelica*, Camphire, Myrrh, Saffron, Citron-peel, Juniper-berries or *Spec. Liberant.* ʒſs. Sugar ℥ſs. Oil of Cin. gutt. 4. for Lozenges.

4. Styptics; Bole in Lozenges, Pimpinell in Wine, *terra ſigillata* in Beer, Meadow-ſweet in Poſſet-drink, Ruddle in Milk.

For

For Cure of the Plague no Evacuation by bleeding, vomiting, purging, Glisters can be proper, because the Pulse is extreme weak and unequal: The only Cure is by sweating 24 hours by a Bolus, given once in 4 hours, till by a *Crisis* the Bubo's and Carbuncles are forc'd out into the Skin.

Blisters and Bezoardics raise the depress'd Pulse, and volatile Salts.

All Repellents and Opiats are dangerous, because they stop the Circulation, and sleep must be avoided for 24 hours: but we mix Styptics with the Bezoardics for Hemorrhages, as Treacle-water ʒj. Bezoardic Vinegar ʒss. *Bole* and *Dioscordium ana* ʒss. boil Bistort-roots in Bezoardic Vinegar or Posset-drink made with it; *Galen* scarify'd the Legs and bled ℥ij. to cure himself of a pestilential Fever.

After the Plague, we may purge on the 4th day with Rhubarb, if necessary, for by that time the Fever has had the *Crisis* thro' the Skin-Glands.

To prevent the Plague we may bleed, which is good against Putrefaction, and purge with Aloetics; avoid putrid Diet and hot Baths, and mix acrids, acids, bitter and salt Tastes in our Diets, all which hinder Putrefaction, and help the Pulse and Circulation.

In Malignant Fevers the Blood runs faster than in Health, yet it runs too slow to  
sepa-

rate the putrid Matter from the rest of the Mass ; and that Fever is most pestilent, where the Effervescence, natural to a Fever is wanting, and the Pulse and Circulation is not considerably irritated to a due celerity.

Thus *Kircher* describes the Pulse in the Plague, *in quibusdam pulsus a sanissimi hominis pulsibus non differt, in aliis contra Turbulentus, fervidus, velox & interruptus.*

The Plague must have its *Crisis* in 4 days, or else they die in 4 days.

*Mercurialis* describes the Pulse in the Plague thus ; *Pulsus parvi, celeris, inaequales.*



## C H A P. IX.

*The Pulse in the Scarlet-Fever and Measles is weak, quick, frequent and unequal.*

**T**H E *Cuticula* is affected by the Crisis in these, as the *Cutis* was in the *Small Pox*, and the Crisis usually happens on the third by an Efflorescence in the regular *Measles*, but not till the seventh in the epidemical malignant kind.

In these Fevers the red part of the Blood seems to be most putrify'd, or over-rarify'd, as appears by the redness in the Skin, and the Water being pale and thin, is a sign the Serum is not putrify'd; but during the Ebullition that is forc'd into the Glands of the Brains, and causes Deliria, Coma's and Convulsions in the Tendons, thro' the Glands of the Throat and Lungs it is also forc'd, and occasions a Cough, and in the Glands about the Eyes, it causes redness and heaviness of the Eye-lids.

There is less inequality in the Pulse in these Fevers than in the *Small Pox*, because the red *globuli* do not oppress the Circulation, so much as the Serum, the Breath is  
also

also oppress'd, and is quick and anhelious.

As soon as the Efflorescence begins, the Pulse becomes more strong and equal, and continues so for three or four Days till the Efflorescence goes off, and then the quickness and frequency of the Pulse abates, by which we may conjecture that there is a good crisis made of the red part of the Blood into the *Cuticula*, whilst that continu'd mixt with the Blood the Fever continued, and that by a circulation of three Days was digested for a critical Eruption, and that lasts three Days in the benign kind.

In malignant *Measles*, after the Efflorescence, the feverish Pulse remain, and ends in Coughs, Consumptions, *Diarrhæa's*, *Scrophulæ*, *Ophthalmia*; during the Efflorescence the Fever is Inflammatory, if the Serum be sizy, and then produces Quinsie and *Ophthalmia*, and *Peripnumonies*, and then the feverish Pulse lasts three Weeks, as other Inflammations do.

The Pulse too much depress'd before or after the Efflorescence, requires Alexipharmics and Blisters to raise it, and help the crisis by a strong circulation.

The Pulse too high after the Efflorescence, whence it produces the Inflammations, *Auginas*, *Peripneumonia*, &c. requires Bleed- and Opiates.

There

There seems to be an intermitting Fever in the *Measles* and *Scarlet Fever*, as well as in the *Small Pox*; and if this be not cur'd by an Efflorescence into the *Cuticula*, the Fever will continue after it, with Coughs, Inflammations and Diarrhea's, and it requires the Cortex, Opiates, and Bleeding to stop the quick and frequent Pulse, before we Purge, because purging makes the Pulse more quick and frequent in all Fevers.

Since the *Small Pox* is an intermitting Fever, altered from the common kind, by the putrefaction and Inflammation of the Pustule, as soon as the maturation is over, we ought to give the Cortex for the Fever which remains, and in grown Persons proves mortal without it.

*Note*, That a thinner Serum appears in the *Chicken Pox*, and they break forth, ripen, and decline in a Day, but the ebullition before that crisis has a feverish Pulse:

I will here make these useful Reflections.

1. That by the weak and small Pulse, it appears that the *Small Pox* and *Measles* are not pure inflammatory Fevers, because these have always a great and a strong Pulse attending them; and they depend on some sizzly Serum which obstruct the ends of the Arteries, and thereby cause pain and burning, and cause a tumultuous motion thro' the other Arteries, which we call the Fever,  
and



and this fizy Serum has no putrifaction joined with it, as in the *Small Pox*, *Measles*, *Scarlet Fever*, and the *Erysipelatouse Fever*.

2. In the *Erysipelatouse Fever* the putrifaction is less than in the *Small Pox*, and the Fever is intermitting, and affects the *Cutis* with a Tumor, and has Pustules thrown out critically, full of sharp Lympha or Pus ; and if the crisis be ill, it ends in a malignant, in which the Nerves are affected with Delirium, Coma, Convulsions, the several degrees of Putrifaction, and parts of the Blood which suffer it, as well as the parts on which it is critically expell'd, distinguish these several Fevers.

3. There is a crisis in all these Fevers on the 3d or 4th Day, but there is no maturation but where the Serum is infected and ripens in the *Cutis* on critical Days, as 9th, 14th, 17th, 20th Days.

4. The quick and weak Pulse are the special signs of these Fevers, with a quick and anhelious breathing, and both the Pulse and Respiration shew the oppression on the circulatory Organs, and from the alteration of the Pulse we take our various Indications ; 'tis the circulation which digests, expels and ripens, and the Physician's care, in the cure of malignant Fevers, is to raise the Pulse and Circulation to such a Vigour as will digest, expel, and mature that part of the Blood which is infected by the aerial Poyson.

5. We find in the Pulse the true diagnostics of these Diseases, we discern the good and bad Crisis by the Pulse; no Symptom except the Petechie and Hæmorrhages can so certainly foretel the good or bad event of this Disease as the Pulse, which shews the strength of the Patient, and the vigour of the Circulation to digest and expel the infected parts of the Blood; by the Pulse we know when we must accelerate the circulation by Alexipharmics and Blisters, and when we must check the circulation by Opiates, and the stypticity of the Cortex, or Bleeding; and by the Pulse we may distinguish these malignant Fevers from Inflammations; and if we observe pains of the Back, and Head-ach, and Sicknefs, we cannot thence conclude that it will be one of these Fevers, unless the Pulse be small, weak, unequal, and such Pulse with those Symptoms will make a true pathognomic Sign of the Disease.

I have counted 106 beats in a minute, in a mild *Small Pox*, and a 120 in a middle *Small Pox*; the frequency of the Pulse indicates Opiates to stop it, for the frequency spends the Spirits too much.

The Alexipharmics in these malignant Fevers, have these sensible Qualities, whereby they accelerate the circulation, and help the oppression on the circulation, by altering

tering and rarifying the Blood and Spirits.

1. The Aromatics, or Odoriferous, or Fœtids, *Lapis Goe, pul e chelis composit. Flores calendulae, Croci, aq. Meliss, cinn. horde & aq. Peon. composit. tinct. Croci, Castorei.*

2. Bitter Acrids, Theriaca, Dioscordium, Serpentaria, Contrayerva, *aq. Epidemia, Theriacalis, Cochinella, Lapis Contrayerva, aq. lactis Alexiteria, aq. cevasorum nigr. &c.*

3. Volatile or fixed Salts, *Spir. Sal Armoni; Pulvis Ethiopicus.*

The mildest Alexipharmicks are the Aromatics and Fœtids, the moderate are the bitter Acrids, the strongest are the Volatile and fix'd Salts.



## C H A P. X.

*The Pulse in the Small Pox is small, quick, frequent, but unequal.*

**B**Y the quickness and frequency we discern the Fever, by the smallness and inequality the oppression on the Organs of Circulation, and this makes it a malignant Fever.

The Pulse is quick and frequent in all sorts of *Small Pox*; but more strong and greater in the beginning of a mild *Small Pox*; but 'tis very small and weak and very unequal, where the *Small Pox* is very malignant.

If the Pulse be strong and equal in the beginning, 'tis a sign that the Circulation can digest the malignant serous Humour, and expel it thro' the Glands of the Skin; but if the Pulse be small, unequal and weak in the beginning, 'tis a sign that the Circulation cannot sufficiently digest and expel the malignant Humour, or putrid Serum.

At the first seizure of the *Small Pox*, the Pulse is small, unequal, with Oscitation, Pandiculation, Rigour, Horror, and these symptoms depends on a small Pulse and  
flow

slow Circulation; but as the Circulation is accelerated during the apparatus of the Disease,

These Symptoms depend on a malignant Serum forced into the Nerves, a Coma, *Subsultus Tendinum*, Epilepsy, Restlessness, Delirium, Watching; the Serum forc'd thro' the Glands of the Stomach and Intestines, produce Vomitings, Cholicks, *Nausea Diarrhaea*; the same forced thro' the Glands of the Mouth and Throat, a Thirst or Cough; thro' the Glands of the Kidneys, red Urine, or pale; the sizziness of the malignant Serum produces pains in the Limbs, Back, Head, and makes the confluent Pox.

The Pulse is oft made weak by grievous Symptoms, Pains, Vomitings, which must be cur'd before the crisis.

If the Pulse be strong, equal, with Vomiting, great pains on the Back and Limbs, with Cholicks, Convulsions, Restlessness, Delirium, Watching, for all these we may bleed before the crisis, to draw the malignant Serum from its defluxion thro' improper Glands, and we may stop the exceeding Pulse and Defluxion by Opiates, and at the same time help the critical expulsion thro' the Glands of the *Cutis*.

A strong and equal Pulse will always admit of bleeding, during the apparatus or feverish Ebullition, but otherways, bleeding, purging, and strong Vomits, are improper

in malignant Fevers, wherever the Pulse is small weak, unequal.

In a Sopor, if the Pulse be strong, we bleed to help the Oppression, but if weak, we must only use Vesicatories and Alexipharmics to raise the Pulse, since it appears by the small unequal Pulse, that the *Small Pox* is a malignant Fever, we ought to use Alexipharmics in it, and not always the cool Regimen against Inflammation, for by the *Fator putrido* of Humours, we discern the malignity of the Fever.

If the Pulse be weak, unequal, with Faintness, colliquative Sweats, purple Spots, miliary Eruptions, pale Water, little Heat, a Coma, a slow Crisis, and *Subsultus Tendinum*, we must use Vesicatories and Alexipharmics to raise the Pulse and quicken the Circulation, because these Symptoms depend on a slow Circulation of the malignant Serum.

The great Art in managing the apparatus or ebullition of the *Small Pox*, is to raise the Pulse by gentle Vomits, Blisters and Alexipharmics at first; if the circulation be too slow for the digestion of the malignant Serum and its critical Expulsion, and then no Opiates ought to be given, unless some vehement Symptoms weakens the pulse.

If the Circulation and Pulse runs too high and quick, we ought to restrain and depress it by Bleeding, Glysters, Opiates,  
and

and the cooler Regimen, during the Apparatus.

If the Pulse be increas'd or decreas'd near the Crisis, we may discern thereby whether it will be good or bad, tho' the Symptoms be ill; yet if the Pulse be great and equal, we may infer that there is a due Circulation and strength of Spirits to expel the Serum when putrified or digested thro' the Glands of the Skin.

Tho' the Symptoms be mild, yet if the Pulse be weak and wavering, the Serum will not be sufficiently digested and expelled.

By the strong vibration of the Arteries we discern that Hæmorrhages and other Symptoms, depend on the great rarification of Humours, and not on the oppression of Spirits, and *e contra*.

The Crisis of the putrified Serum ought to be in three or four Days, if later or sooner, it is not a perfect good Crisis. In the distinct *variola*, the Crisis is made in one Day, and then the Fever ceases with all its Symptoms, and the Pulse remits in its frequency and celerity, there being a lesser quantity of putrid Serum, and that is expelled altogether.

In the confluent *variola*, the Crisis is imperfect, by reason of the sily Serum, or its great quantity, or the weakness of the Circulation; the Serum not expelled keep up



- the Fever, and then the Circulation makes another Crisis by Salivation, or Urine, or the swelling of the Extremities, and the critical Eruption lasts three Days thro' the Skin, after which the Fever ceases.

If the Crisis be bad, as in a malignant kind, the Pulse is weak, quick, frequent, with *Subsultus. Tendinum*, Coma, Deliria, Vigilia, Hæmorrhages, *Petechia*, *Vesicula Miliæres*, *Nicturitions*, *Ptyalismus*.

If a general Efflorescence happens for a Crisis, with black spots interspersed, 'tis a fatal bad Crisis, and it is a sign that the red part of the Blood is putrified as well as the Serum, and the Purples and *Petechia*; that the viscid part, as well as the red, are putrified, and in such the Blood has lost all its consistence, and becomes fluid, as appears by the Hæmorrhages, and the Blood then let forth by the Lancet.

Another bad Crisis happens when the *Petechia* appears among the distinct *Small Pox*, which is a sign of putrified Blood, or else the *Vesiculae Aquææ*, which shew the crudity and indigestion of the Serum, or its great Quantity or Acrimony.

When the celerity and frequency of the Pulse ceases, we need no Medicines, but when they continue, the Crisis must be helped by Opiates, and Alexipharmics, and to these in Hæmorrhages we add Stipticks and Acids.

When

When the Crisis is made of the putrid Serum thro' the Glands of the Skin, the Blood is stop't by that Tumor, and in the distinct kind, the Arteries vibrate as in all other suppurations, but the Pulse is not very feverish and quick, and the maturation is performed in two Days, as all the other stadia are in the same Time.

The feverish Pulse remains in the confluent, unless sufficient evacuation be made by Salivation, Urine, or the swelling of the Hands, and Face, and Feet, which keeps the feverish Pulse low ; if these evacuations cease too soon, the feverish Pulse rises again. The maturation lasts to the 9th, 14th, 17th, or 20th Day, but if the Fever does not rise till the 4th or 5th Day, and (the maturation is then the best) all will succeed well, the sooner the maturation happens, the better it is.

If the Salivation lasts to the full maturation, 'tis a good sign.

In the middle *variola* the Fever and Pulse remits, during the maturation, the Fever continuing in all the stadia is fatal, and if the feverish Pulse continues, we cannot trust any other good signs, tho' the Exanthemata be irregular, yet if the Fever intermits, which we know by the Pulse, all will succeed well.

After the *Small Pox* the Pulse oft remains Hectical, and in the declination of the malignant

**lignant Pox** the Pulse is quick and weak; but in the declination of discreet and kindly **Pox**, the Pulse is natural and not quick.

During the celerity of Pulse we must not purge in the declination, but give the **Cortex**.

The *Small Pox* Fever has the type of an intermitting Fever in the beginning, during maturation, and in the declination, and for that in the maturation and declination we give the **Cortex**, but not before the Crisis is over, which lasts all the time of Eruption.

The stop of the Circulation by any Tumor, produces a feverish Pulse, which ripens by agitating the Humor, the Tumor in the Skin is greater in the confluent **Pox**, which raises the Fever higher, and the size makes it long in maturation.

## C H A P. XI.

The Pulse in the Hectic Fever is small and frequent, in the beginning, and as it proceeds, weak and hard in a deep Consumption. See Zecchius Consult. p. 108.

THE quick and frequent Pulse shews the Fever, the small Pulse the evacuation of the nutritious Humours, the weak Pulse the debility of Spirits in an old Disease, the hard Pulse the siziness of Humors which obstruct the Arteries, and causes Inflammations.

The Causes of Consumptions are,

1. Whatsoever evacuates the nutritious Humours, as Chyle, Serum, or Blood, as Diarrhea, Vomiting, Spitting, *fluor albus*, Gonorrhæa, Lactation, Venery, Sweating, Salivation, Hæmorrhages, Ulcers external or internal, Diabetes.

2. Whatsoever natural Secretion is stop'd and fills the Blood with any hot *Cacoehymia*; in the Scorbutic the Blood is over-salt; after intermitting Fevers, Rheumatisms, Pleurifies, the Blood is too viscid, and in all Schirrosities of the glandulous *Viscera*, as in  
the



the Jaundice, swell'd Spleens, and Scrophulæ, the *Lympha* is too sily; in Impostumations and the Pox, the Humours are putrid.

*Note*, That if the Circulation is stop'd in any part, it must run faster in the next, and cause some Evacuation of the *succus nutritivus*, with an *Ephemera* Fever.

3. Obstructions in the Blood-vessels cause the unequal and irregular Motion of the Blood, which hinders the true digestion and assimilation of the Chyle with the Blood, and by being thus deprav'd or sily, breeds some *Cacochymia* in the Vessels, which is the ferment of an *Ephemera*, or continent Fever, and the Matter of some Catarrhs; so the suppression of the *Menstrua*, or Hemorrhoids, breed a Consumption.

In the first degree of a Hætic, the Pulse is quick and frequent, as in an *Ephemera*, with a Catarrh; but this Fever and Catarrh arise from the crude *Tubercula* in the Lungs, which give a dry Cough, and weight in the Breast, with difficulty of Breath, and heat after eating: These *Tubercula* seem to me to arise from the chylous *Lympha*, which is made viscid by Fevers or Inflammations; and because ill mix'd with the Blood in the Lungs, 'tis apt there to obstruct the Glands of the *Trachæa*, and the obstructed Gland grows into a *Tuberculum*, which irritates the *Trachæa* to a Cough; the *Ephemera* produces

duces thirst, want of Appetite, watching, burning.

The feverish Pulse is less in the Scorbutic, and Hypochondriacal, and Phlegmatic, as in Consumptions after chronical Diseases; and in old Men in the beginning of the Phthisis, then in young Persons, and after acute Diseases.

The Pulse is observ'd to be unequal in all Defluxions on the Lungs, because the *Tubercula* obstruct the Circulation through the Lungs, and a full Inspiration is wanting to promote the reflux of Blood: The Consumption of the Flesh depends on a feverish Circulation, which hinders the assimilation and depraves the Digestion of our Nourishment.

1. The Indications in this first state of the Phthisis are, from the quick and frequent Pulse to cure the *Ephemera* Fever, by bleeding twice or thrice in small quantities, to use lenitive Purges and Opiats after them; the small Pulse will bear no great Evacuation, and Opiats stop the Pulse and Catarrh at first, Acids and Acerbs cool.

2. For the *Tubercula* and Obstructions in the Lungs, and the Catarrh and unequal Pulse, 1. The oily Medicines, and pectoral Drinks, and gentle Vomits two or three, and *Merc. dulcis*. 2. The Balsams of Sulph. and Gum dissolv'd, as *Ammoniacum*, *Balsam. Terebinthinat.* *Aniset.* *Balsam. Peruv.* Take  
Tar

Tar Pills and Pectorals in Diet-drink, which are bitterish and styptic, and antiscrophulous Medicines, pectoral Hydromels. 3. The steel cool Preparations and cooler Antiscorbutics, are proper to open the Glands. 4. Steel-waters, and *Buxton* Waters, and *Bath*, distill'd Milk, with Pectorals and Antiscorbuticks, Wood-drinks, Wheys, with the cool Antiscorbutics, Emulsions, pectoral Drinks, Broths of young Animals, and Water-drinking, dilute and thin the salt and viscid Humours, and make them fit for Circulation; and a Milk Diet has the same effect, but is injurious in schirrhous *Viscera*, and Dropsies, and the *Scrophulae*.

*Note*, That Water-drinking is the chief Specific for all Defluxions.

Acids, as *Spir. Nitri dulcis*, and the Acerbs as Plantain, Housleek, Purslain, stop the Fever and Pulse from a great quickness.

The Mucilaginous cool the Humors and stop the Pulse; as Burrage, Bugloss, Fumitory, Decoction of Snails, Frogs, Worms, and all farinaceous things, as Rice, Barley.

The Styptics and Opiats stop the quick Pulse and all Evacuations; yet *Note*, That all Acids, Acerbs, Styptics, Opiats, increase the *Tubercula* and all Obstructions.

In the symptomatical Consumptions we prescribe Specifics against the original Disease, mix'd with the Anti-hectics, as the

*Cor-*



*Cortex* in Consumptions, which depend on an intermitting Fever, the Diseases which produce the Consumption are, Fevers, Scurvy, Pox, Gout, Asthma, Hyfterical Vapors, and the Hypochondriacal, the *Scrophula*, suppression of the *Menstrua*, Piles, Jaundice, and all the Evacuations of Nutriment: In these cases the hectical Pulse succeeds that of the original Disease, and is alter'd by it at first.

2. The second degree of a Hectic has the Pulse of an inflammatory Fever, hard, quick, strong, which ripens the crude *Tubercula* in the Lungs, with thirst, pain of the side, watching, intense heat, and this requires the method for curing the Inflammation of the Lungs and hard Pulse, by frequent bleeding, Oils and pectoral Medicines, external Fomentations and Liniments.

The high Pulse which is frequent, belongs to all Inflammations.

3. In the third State the Consumption is confirm'd, with a putrid, intermitting, quotidian Fever, which depends upon the *Impostumation* of the *Tubercula*, the Vigor, and also from the *Impostumations*; the *Serum* well digested is the *Pus* of an Ulcer; all Matter is bred with pain and feverish Pulse, the Colour of the Matter shews the *Cacochymia*.

The Pulse in this third degree of a *Phthisis* is quick, weak and small out of the Fever-Fits, but quick and high in them, and after  
the



Evacuation at the end of the Fit, languid, and less quick and frequent.

No Evacuations are proper in this State, as appears by the small and weak Pulse, but we use Expectoration, Balsamics, Opiats.

The *Tubercula* usually ripens on the 7th day by the inflammatory Fever; this Fever oft returns upon new Inflammations.

The *Cortex* only palliates the Fever, Vulneraries and Balsamics aim best at the Cure, if the very frequent Pulse will admit of 'em, and the Symptoms must be reliev'd by Opiats, as the frequent Pulse indicates; but because the Impostumation cannot be cough'd up, a confirm'd *Phthisis* is never cur'd; cold Baths, drinking *Buxton* Waters, and riding best relieve this state, and the *Cortex* by hindering any farther Impostumations.

The weak and small Pulse indicates a nutritive Diet to fill the Vessels, and to support the Pulse and Circulation by Cordials.

The celerity of the Pulse is omitted by *Zechius*, but all other Authors mention it; that is a true sign of the Fever, which in the beginning is usually an *Ephmera* long continu'd, and has that Pulse, after the Fever is Inflammatory, as in a Pleurisy or *Peripneumonia*, and at last the Pulse is quick, weak and frequent, which is the certain *Hectic* Pulse, and a sign of suppurated *Tubercula* in the Lungs: Thus the Pulse aptly distinguishes the several States of the Crudity, Maturation

and Suppuration of the *Tubercula*, and the various Alterations of the Pulse indicate differently.

When 'tis become *Hætica Marasmodies* the Pulse is hard, quick, frequent, very languid, and in *Empyemas* the Pulse is unequal and oppressed by the purulent *Serum* in the cavity of the Breast.

The unequal Pulse indicates the Evacuation of that *Serum*, which is only possible by a Tap in the Breast, and then I have observed that the Hætic Symptoms will cease.

In the Hætic of old Age the Body is cold and dry, and the Pulse languid, small, rare, and this Pulse only indicates a nutritive cordial Diet.

In an Atrophy by Obstructions of the lacteal or blood-Vessels, at first the Pulse is strong, high and frequent, as in a continent Fever, and it ends in a *Marcor*, or *hætica senectutis*.

## C H A P. XII.

*The Pulse in Inflammations is great, quick and frequent, and hard, in the increase more hard, and vibrating, but less, and very frequent; if it end in a Schirrous, 'tis small and hard.*

**A**LL Inflammations do not produce these Pulses, but those which are greater in a sensible part, or some of the principal parts, and then much Heat, Tension, and a Fever accompany it; the obstruction by sily Blood in the Artery, makes the Pulse hard, in Nervous Parts, which straiten the Artery most. I will give an instance of this Cure in a Rheumatism, which is a general Inflammation by sily Blood, which stops the circulation in the Muscles, and causes great pains in the Limbs, and hinders the circulation of the Lympha thro' the Glands and Lymphatics.

The causes of the sily Blood are,

1. The Chyle coagulate in the Blood.
2. The Serum of the Blood made thick by external Cold.

3. Ef-

3. Effervescences in Fevers produces Pains and Stitches in fizy Blood.

A universal Rheumatism has always a Fever, but a Sciatica or particular, has not, unless the pain be great; when the Back is chiefly affected 'tis a Lumbago, when one side of the Head a Hemicrania, and when the Hip is pain'd a Sciatica, and the inward Inflammation by fizy Blood are Quinsy, Inflammation of the Lungs, Apoplexy, Palsy, bilious Cholic, &c.

The external causes which produce siziness are hot Baths, great Exercise, and sudden cooling afterwards, Surfeits, Venery, Passions, extreme Cold.

1. The indications from the feverish, great, quick, and frequent Pulse, are to evacuate the fizy Serum by Bleeding, by Fits, to 60 ounces, by gentle Lenitives, Glysters are most useful for 14 Days.

2. The Effervescence must be check'd by a thin Diet for three weeks, by watry cool Liquor, Whey, Milk and Water, Acids, as Tincture of Roses, Coral Tinctures, Niter in Pectoral Drinks, Oyl of Vitriol in Broths, 5 drops, roasted Apples and Milk, Emulsions, drink Whey for 14 Days, and eat Bread at Dinner and Supper; use for diluting also distil'd Milks, with Horsedung, and Antiscorbuticks, after Milk, Snail-water; Posset.



Poffet-drink, with Dandelion, Sorrel, Plantane, Water-creffes, Gill, Barly-water and skim Milk, these dilute and thin the viscid Serum.

3. When the fizy Blood is diluted and digested or putrify'd, purge with Manna and *Sal Catharticum*, and after three Weeks with Calomel, and resin of Jalap, then use a decoction of Sarsa and Volatil Spirits, or Tincture of Antimony, and in cold Cases Balsam of Polychrestum, the Diureticks are Gilead Balf. Turpentine Pills, Millepedes.

For the Pains give *Diafcoridium* 1 ounce, Poppy-water and *Sal Prunell.* Syrup of Poppies.

5. When the pain returns by Fits in the Hemicrania after general Evacuations, give the Cortex and Laudanum to cure the intermitting Fever, which is often complicated with the Rheumatism.

When the feverish Pulse ceases, we use Steel and the Antiscorbuticks to restore the decay'd Circulation by evacuation, and Bitters for digestion.

We bleed in the Foot for the Sciatica, and in the Neck for the Hemicrania; an Issue in the old Sciatica does much good three Fingers below the Knee, or a Cupping Glass with the Flame apply'd to the Hip and scarifie it.

The Topics in the Sciatica are,

I. Hor

1. Hot fervid Acrids, Oyl of Orris, ferment with a decoction of Pepper-wort, or Water in which Cabbage was boil'd, or hot Urine and Mustard-seed, Mustard and Figs pounded, Oyntment of Garlick, Oyntment of wild Cucumber-roots, and Auxungia, *Ung. Martiatum*, with *Aqua Vita* and Oyl of Rue, Nettles boil'd to a Pultis in strong Drink, Ant Eggs with Hoggs-grease, Oyl of Euphorbium, *Cantharides* with Leaven and Vinegar, a potential Cautery of Lime and black Soap, Leaves of Ranunculus.

2. Salt, Soap and brown Bread, ashes of Cabbage and Honey, Sea-water and Vinegar.

3. Sulphur Baths or Cold Baths, Oxycroc. 1 ounce, flowers of Sulph. half an ounce, Oyl of Orris.

4. Fœtid Dungs, Pigeons Dung and Hony, Oyl of Worms, Castor, Foxes, with Volatile Oyl of Hartshorn; bleed in the Ham, use frequent Vomits, strong Purges, Caryocostinum ʒss. *Merc. Dulc.* ʒj strong Glysters.

Briony-roots pounded into a Poultise, or Comphry-roots spread on Leather.

The Rheumatism begins with a rigor, after which Pain, Thirst and Fever succeed.

A dry Cough, the Cholick, and suppressions of the Evacuations by Piles and Menses, or bleeding at Nose, oft ends in Rheumatick Pains.

The Rheumatism oft lasts 6 Weeks, 'tis dangerous when it falls on the Head, Lungs, Belly, it has its crisis by thick Urine; much Sweat after three Weeks.

If in the beginning we purge much, it lasts some Years; 'tis apt to relapse unless prevented by bleeding Spring and Fall.

A Rheumatism which succeeds an Apoplexy or Convulsion, is a translation of the fizy Blood, and a crisis; long Fevers oft end an Ischiadic Phthisis.

A Cholick and Loosness succeeding a Rheumatism, are often fatal, when the Cholick is easie the Pains are worse.

Old Men who have the Sciatica with a Torpor and Coldness do not recover, under a Year, but young Men in 40 Days.

'Tis a good sign in a Sciatica that the pains go downwards, and the Loins less affected.

A long pain in the Hip imposthumates and corrupts the Bone, and the Matter breaks thro' the Anus.

We must not Purge nor alter the thin Diet, till the Pains abate in the Rheumatism or Sciatica.

Opiates, Anodynes and hot Medicines, and Purges in the beginning, thicken the fizy Serum and fix the Pains, and too much Bleeding hinders the digestion of the fizy Humour, and makes Old Men Hydropical.

The Antients burnt the Sciatica with Flax, and they imputed the *Sciatica* to a *Pituita*,



*tuita*, which we call siziness, which sticks in the Arteries of the Muscles; the Steel and Bath-waters well dilute the sily at last, and in Hectical Cases the Cortex and Milk are necessary; and Cold Baths at last have great effects

We must abstain from Flesh-meats and fermented Liquors for 14 Days, or 3 Weeks, the change of the thin Diet usually causes a relapse.

'Tis difficult to distinguish the Pulse of Pains, from that of Inflammations, because in both they are great, quick, and frequent, and vehement; but the hardness of the Pulse is most remarkable in Inflammations, and the vehemence alone without hardness in Pains; in Fevers the celerity of the Pulse is the true Characteristick, by that we discern the Irritation of the Heart.

The decoction of Ivory is slimy, and is commended for tempering the sharpness of the Salt Humours; and in Rheumatick Pains, the roots of Burdock are also mucilaginous, and may have the same effect.

The Blood impacted in the Arteries, is the immediate cause of the Fever attending Inflammations by putrifying in the part, and by disturbing the circulation, as well as by distending the Membranes, it occasions a great Pain which irritates the Spirits, to produce a quick and vehement Circulation, to drive off the Humor which obstructs the



circulation; external Heat draws the thick Blood into a part and pain, by a Convulsive Constriction detains it in the Vessels, or else an Effervescence in the Blood forces the size into the small cutaneous Vessels, the chief indication in the evacuation of the size, which obstructs the circulation, and stops the circulatory Vessels.

After due Bleedings and Glysters, I usually promote Sweats, by this Medicine.

*℞ Aq. Lactis ℥j. Sterc. Equin. ℥iv. fiat in fuso & colatura, adde aq. Theriacalis, Syr. Papav. rubri ana ℥ij. capiat ℥ij. hora somni adde gutt. 20; Spir. Salis Armoniaci, & 20 Laud. liquid, a tepid Bath is good in the end of a Rheumatism, or a cold one, and then only Purging and Sweating are proper; the Inflammations differ according to the different Parts they affect, and have different Names, as Quinsy, Ophthalmia, Pleuritis, Bubo, &c.*

## CHAP. XIII.

The Pulse in the Pleurisy is quick and frequent as in Fevers, vehement from Pain, hard from Inflammation and the Obstructions in the Arteries, and this makes the Pulse less than in Fevers.

THE Pulse in the *Peripneumonia* is quick, great, frequent, languid and soft, unequal from the oppression on the circulatory Vessels in the Lungs, intermitting, intercurrent.

The Pleurisy is an Inflammation on one side the Breast and Lungs, the *Peripneumonia* on both sides of the Lungs, and a Fever is join'd with both, but the Circulation is more stop'd in a *Peripneumonia* than in a Pleurisy; the Cough, Fever and spitting of Blood depend on frequent and quick Circulation and Pulse, but the oppression in the Lungs produces the *Dyspnaea*.

If the Constitution be bilious, the Pulse is more frequent, and a *Phrenitic* is frequently join'd with it; but if the Constitution be more pituitous, a *Coma* attends them, and the Pulse is less frequent.

If

If the Pulse in the Pleurisy become more frequent, 'tis a sign of a *Peripneumonia* or *Syncope* ; but if more slow, of a *Coma*.

The Causes of these Diseases produce a feverish Pulse and a sily Blood, which makes it hard, and when the Artery is full it appears ferrine, which is the characteristic of a Pleurisy.

1. External Cold, or drinking cold Liquors when hot, which coagulates the Chyle or Serum.

2. These Diseases are oft Symptoms of Epidemical Fevers when the Blood is sily.

3. Evacuation suppress'd, Itch drove in, the Pox, Worms, Inflation of the Stomach, Convulsion, hysteric pains, cause a spurious Pleurisy.

In the Inflammation of the Diaphragm, a Pain compasses the Body like a Girdle.

1. Bleed plentifully three or four times, and give Glisters to abate the feverish Pulse.

2. Cool the Effervescence of the Humors,  
1. By Acids, *Spiritus nitri dulc.* and *sal prunel.* mix'd with Diaphoreticks, *crem. tart. sal prunel. pulv. e chel.* 2. Styptics ; as Acorns powder'd, and the *Cortex* to stop the Fever.

3. Watery Liquors, Emulsions, Ptisans, pectoral Drinks, Barley-water boil'd with Poppy flower, with *spir. sulph.* added, Milk and Water to dilute the sily Blood.

3. Narcotics for the Pain, which must be mix'd with Diaphoreticks.

4. The

4. The hard Pulse indicates the opening of Obstructions of the Arteries by Diaphoretics, which forces the stagnant *Serum* to circulate.

1. Volatile Salts *gr.* 15. of Salt of Hartshorn, or *spir. of sal arm. gutt.* 20. in a Julep of Poppy-water and Syrup, and Treacle-water or *spir. sanguinis* 3ij. in Poppy-water 3iv. and 3j. of the Syr. give it by Spoonfuls oft.

2. Some gentle Bitters cleanse the fizy *Serum* by Urine and Sweat, or Spittle; Decoction of Burdock roots, Emulsion of Carduus seeds and Poppy, Emulsion of bitter Almonds, Decoction of Meadow-sweet, *oxymel scylliticum*, oil of Almonds and syrup of Balsam.

In strong Pulses we may bleed, according to the direction of the Antients, till the Blood looks red; for the siziness makes it appear more black or livid: A Sudorific with an Opiat is successful in the end, but not commonly in the beginning.

Hot Application to the Sides, as fry'd Oats and Chamomile are mischievous till after 14 days, or the Pulse becomes less feverish; but the old Physicians apply'd Water and Vinegar and Bran, fry'd salt and *Milium*; but no Applications are proper till the Pain and Fever remit by Evacuations.

5. The



5. The Pulse unequal indicates pectorals to help the Expectoration of the sily Serum when digested.

1. The sweet Tastes; as juice of Liqueurish, pectoral Decoctions, *aq. malsa*, syr. of Turnep and Nettle-seed in Honey, boil 20 Jujubes in Water to ℥j. add Sugar ʒss. *gum. tragacanth.* ʒj. make a *Linctus*.

2. Oil mixtures, oil of sweet Almonds, syr. of *Althea ana* ʒij. *Sperma Ceti* ʒij. Sugar and oil of Linseed ℥ss. or oil of Almonds ʒiij. in great suppressions of Spitting.

3. Terebinthines in cold Constitutions, ʒs. of *Olibanum* in a pap of roasted Apple, roots of Elecampane or Orris boil'd in Oxymels, Lucatellus balsam, Gilæad balsam, tinct. of Sulphur in Linseed oil, or flower of Benjamin in oily mixtures.

4. The Laurel bitters, oil of bitter Almonds, or the Emulsion.

5. The bitterish sub-Acrids, Ground-ivy boiled in Posset-drink, *Veronica*, *Scabiose*, *Pulmonaria* in pectoral Drinks.

6. Nauseous Bitters; *Oxymel styllitium* ʒss. in ʒiij. of an oily mixture.

Externals after Exacuations and the Pulse remits, use Discutients and Anodynes; *emplast. de mucilagin.* with oil of Linseed, *Ung. Dialthea* ʒij. Cummin seeds ʒij. oil of Chamomile ʒj.

Boil Mallows, Pellitory *ana* Mij. *Althea* and Lily roots *ana* ʒj. Linseed and Fenugreek *an.* ʒss.

℥ss. Flowers of Chamomile and Elder *ana*  
Mj. Cummin seeds ℥ss. make a Decoction  
for a Fomentation.

Cup the pain'd places, apply *impl. diasul-*  
*phuris de cymino* or *melilot.* or a plaister of  
Tar.

In a windy Pain sweat and anoint ; no  
Purge nor hot Medicine can be proper in  
the beginning of these Inflammations.

We must use the thinnest Diet in all In-  
flammations, hot Pains and Fevers.

Boil Gill and Elder in Ale, add Horse-  
dung, Vinegar and oil of Chamomile for  
a Pultefs.

The Method of Cure by spitting and  
dissolving the grumous Blood lasts three or  
four Weeks at least, or 6 Weeks if per-  
mitted to Nature, but bleeding, Glisters  
and cool Diet, do it in three Weeks.

Frequent annual returns of a Pleurisy  
end in an Abscess in the side, which must  
be open'd.

The Dysentery, Itch, Measles or Hæ-  
morrhoids suppress'd, occasion a Pleurisy.

Give the Pectorals warm, and put the  
Feet into warm Water to help spitting ;  
or a tepid Bath is useful.

The tendency of the Pleurisy to the Head  
is prevented by bleeding, Blisters, Glisters,  
spirit of Vitriol and *Diacodium*, and cooler  
Applications to the side, because hot ones  
force

force it to the Head, *spir. nitri dulcis* is good, and the Cortex in Decoction.

Purging by Lenitives in the beginning may be done for any great *Cacochymia*.

In a *Peripneumonia* there is greater difficulty of breath and less pain, but a greater weight on the Breast.

In the Inflammation of the *Mediastinum* the pain is on the *Sternum*.

We must always bleed on the pained Side, because the sily Blood stagnates near it.

In all Inflammatory Pains, purging is injurious in the beginning, but for a scorbutic Pain 'tis good, and in a spurious Pleurisy.

Cupping-Glasses with Scarifications ought not to be apply'd till after the 14th day.

In the ripening of an Abscess, shortness of breath, Fever-pains increase, and cease after suppuration, but they all return upon breaking with Horror.

When the Matter is neither evacuated by spitting, thick Urine or sweat, a Suppuration happens.

The Pleurisy oft ends by pains of the Limbs, or Ulcers of the *Tibia*, and the Pus rarely passes by Urine or Stools; In the Urine I have seen it like a Milky Sediment.

The *Peripneumonia* oft ends by Hemorrhages, spitting or a *Crisis*, by sweat, Diarrhea,  
rhea,



rhea, Urine, or by translation to the Joints, or by an *Empyema*.

Inflammation of the Lungs are dangerous in the old, or Women with Child; Asthmatics, Cachectics, if the Breath be very difficult, the Fever and Cough great, or with a *Delirium*, and in the black *Aeruginose* or very bloody Spittle, or very yellow thin Urine is an ill sign, and when the spitting does not relieve the pain, and if the pain vanish suddenly, 'tis a sign of *Delirium*.

Sudorifics with Opiats are most proper in malignant Pleurifies, and then bleed not above one or twice.

If the *Peripneumonia* exceeds the 20th day it suppurates.

Natural Strength is the best ground of Recovery in a *Peripneumonia*, but 'tis dangerous in weak Persons.

Vomiting of Choler and a moderate *Diarrhea* are good in the beginning of a Pleurisy; but an immoderate Flux when the Person is weak, is dangerous, but after a *Crisis* by sweat the *Diarrhea* is good.

A *Peripneumonia* after a Quinzy is fatal on the 7th, or turns to an *Empyema*.

Purgings hinders spitting, which ought to begin after the fourth day, yellow and bloody, but those Colours are not good after the 7th.

An Hæmorrhage on the 7th or 14th often cures.

Cri-



Critical Sweats happen the 4th, 7th, 11th, 14th and 21st days; this shews the benefit of Sudorifics in the declination, as in all other Inflammations; I observe a *Crisis* by Sweat on the 7th.

If the *Empyema* be not cleansed in forty days, it turns to a Consumption.

The great hardness of the Pulse shows a great Disease and difficulty of Digestion, if join'd with weakness 'tis fatal.

There is usually a *Coma* join'd with a *Pleuripneumonia*; if the Fever be greater than the *Coma* the Pulse is more frequent, but if the *Coma* be greater than the Fever, the Pulse is more rare.

---

## C H A P. XIV.

*Of the Crisis in Diseases, according to the Galenists.*

**A** High and vehement Pulse are signs of Excretion in the state of a Fever.

A soft undous Pulse is a sign of Excretion by sweat, a hard of vomiting, a great Pulse is a sign of the motion of the Humors externally to Hæmorrhages or Sweats; a small Pulse is a sign of the motion of the Humors internally by Vomit or Purging; the Pulse is unequal when the *Crisis* is by the Stomach.

The best *Crisis* happens when the celerity of the Pulse remits, which is a sign of Concoction.

A high and vehement Pulse are a sign of natural Strength.

The Pulse becomes more strong, ordinate and equal in the declination, when they recover.

The Pulse is more weak, and unequal, and inordinate in the declination, when they die.

The Signs of a *Crisis* are pains of the Head, *Delirium*, *Vertigo*, *Dyspnœa*, Anxiety,  
H
much

much sleep or watching, involuntary Tears, red Face, *Nausea*; the Pulse is inordinate and unequal the night before the *Crisis*; with many great and high beats, but after the *Crisis* the Pulse is equal; the Pulse's inequality shews the great perturbation which precedes the *Crisis*, which always happens in the state of the Disease, and in the Fit.

A *Crisis* is the sudden solution of a Disease, which happens in great Diseases, but 'tis call'd only a Solution in small Diseases.

An exquisite burning Fever has its *Crisis* in the first Week.

If a Cloud, or *Eneorema* appear in the Urine after the first Fit of a Tertian, it will last but four Fits, but if no Cloud seven Fits.

The mildest Fevers, with good signs, have their *Crisis* in four days, and the most malignant, with bad signs, kill in four days, or sooner; a Fever less mild, with indifferent signs, has a *Crisis* in the second period on the 7th.

Whosoever observes the *Crisis* in the Small-pox about the 4th, and the fatal days in its Course; or that of the Measles and Plague, will acknowledge, that there are critical days in our Fevers which are malignant; the same we observe in Fevers intermitting; but because of our cool Air our Fevers are long, and we procure a *Crisis* by the *Cortex*, which ought not to be given till

till there appear Signs of Concoction, and after full Evacuations.

A less malignant Fever kills on the 7th.

The quicker and greater the Pulse is, the sooner is the Coction, the more flow and rare that is, the later, but the ill temper of Humors hinders the usual Concoction in Fevers, as well as improper Evacuations; for Fevers have naturally these critical days, 4, 7, 11, 14, 21, 30, 40, 60 days; we may observe a *Crisis* on other days, but 'tis not so certain, perfect and secure; and we must not expect an exactness of so many days, but near them, and those we must call our Judicatory-days, on which many perfect *Crisis*es happen by manifest Excretions, or Abscesses, without great danger, and the *Crisis* was indicated four days before by the Concoction in the Urine and Pulse.

Few are judg'd on the 6th, and not without great danger.

The equal Judicatory-days are 4, 6, 8, 10, often after these Relapses happen and death.

No critical Evacuation is in small quantity.

The white, light and equal Sediment is a sign of Concoction of Humors, and a good *Crisis* has this Sediment; and a general sweat on a critical day, by which the Fever is cur'd: Crudity in the Urine is a sign of Impostume, or the length of the Disease,



Pain or Death; Digestion in the Urine is like the Matter in Ulcers, but if either be indigested 'tis an ill sign.

If there be signs of Concoction on the 4th the *Crisis* happens on the 7th; the beginning of the Disease is till the signs of Concoction, and if the Crudity lasts till 14 days the Fever will last till 40, if till the 7th day, it will last till 20.

*Galen* never observ'd a good *Crisis* on the 16th and 17th.

They who grow worse on the 4th, die on the 7th.

The 7th critical Solution is perfect, certain, and without ill signs and danger, the 14th is like the 7th, and the 20th as certain.

In the second degree we may reckon the 9th and 11th, less perfect and certain.

In the third degree we reckon the 5th, 4th, 3d, 18th, 8th, 10th, 12th, 16th, 19th, most imperfect.

In the second and third degrees of critical days the *Crisis* happens seldom, and with ill signs, much danger; so on the 6th day the acrid, fœtid, malignant Humors are vomited up or purged, there is a *Crasis*, the Pulse falls, they tremble, look pale, and a malignant *Parotitis*, or Jaundies happens, thin Urine, unequal, crude but copiose, *Syncope* great, Hæmorrhages, immoderate purging, *Catoche*, *Mania*, *Marcor*, and the Secretions are not profitable.

Ill signs prognosticate an ill *Crisis*, and if ill signs appear on the 4th day, they die on the 7th.

If the Strength be weak, and improper Medicines and Evacuations and Diet be us'd, they alter the *Crisis* from its natural time, and then they die in the worst time of the Fit, by which the Hour may be predicted.

If signs of Concoction appear the 1st day the *Crisis* is on the 4th, but if coldness of the Extremities, fainting, *Coma*, small and obscure Pulses, *Delirium*, cold Sweats, vehement heat happen on the first day, they die on the 4th, but if they appear on the 4th, they die on the 7th.

Extreme Fits and Symptoms are signs of a short Disease.

The diary Fevers, which *Galen* calls πνέυματοι παθηματα, have their Solution on the 1st, 2d or 3d day.

The *Causus* ends in 7 or 14 days, and this *Crisis* is in cholerick Diseases.

The greatest and most vehement Pulses have the most vehement Symptoms, and these Fevers are as dangerous as when the Pulse is small and weak, and both may be call'd malignant Fevers.

Sweat and Fluxes by Urine and Stools are good *Crises*, if follow'd by a natural Pulse.

Sweats on the 3, 5, 7, 9, 11, 14, 21, 30 days, are critical.

The

The *Crisis* happens on all days, but not so often on some as others, nor so good, and the *Crisis* sometimes lasts many days. In the Small-pox the *Crisis* may be said to last till the *Pustulae* are fill'd, after, during the Maturation the Fever is Inflammatory, after the Maturation the Fever is intermittent, and wants a further *Crisis* by Spiting, Urine, or the *Cortex*. The different Motion of the Circulation produces the different *Crisis*: *ὡς τελαγμένον τὸ χροῖμα εἰς ἐν εἰ φύση*; these Motions are made in definite Proportions, and ordinate Periods, and they produce the particular critical Secretions of any secretitious Humour which abounds in the Blood, and that according to their acrimony or mildness after the *Crisis*.

The Constitution, the Age, time of the Year, strength of the Spirits and natural Heat, make the difference of the *Crisis*, by altering the motion of the Circulation.

In the *Peripneumonia* there is a sify Blood with a vehement Fever, and this is judg'd as other Inflammations in 14 or 21 days, *quibus parotides orta 20 die crifum haberunt*, and that is the first critical day in sify Blood.

The putrid state of Humors makes a *Crisis* in 4 days, as in the Plague, the Choleric state in 7 or 14, as in *Causus* and Tertians.

The Fevers from the pituitous state are long, because they have more slow and rare Pulses, and they last till 40 days.

In



In sanguine Tempers the Motion of the Circulation is moderate, and that produces a *Crisis* in a moderate time, because that Humor is easie to concoct on the 14 or 17.

A burning Fever and *Phrenitis* are judg'd by Hæmorrhages at the Nose, Tertian by biliose Vomits and Stools and liberal Sweats, Quotidians by Sweats and excretion of *pituia*

Great Inflammation in the *Præcordia* are judg'd by Sweat and Hæmorrhages.

Fevers from *atra bilis* are the longest, as in Quartans, being thick and viscid, as well as hot, with frequent Pulses, but more slow than ordinary Fevers.

The Coction in the Urine and Spiting are signs of a good *Crisis*.

The greatness of the Fever is known by its vehemence of Pulse the Motion by the sudden running thro', the increase, state, declination, the Idea of the Fever is known by the Pulse and Symptoms, and the Pulse shews the motion, the malignity by the low, weak or very great and vehement Pulse.

The Gout ends in 40 days, which is a continent Fever, in a salt Blood, and the fatal Fits end by vomiting and purging, Apoplexy and *Dyspnea*.

The Sciatica is from viscid Blood and Bile, and has also a small Fever, as *Galen* calls it, *πυρετοὶ ἐλαχρεῖ*; after 40 days the Fever ceases by Abscess rather than Excretions; to the 14th the Fever is vehement, and less toward the 20th, and much less to 40. In



In fizy Humours the 20th and 40th are remarkable Indicatory-days, as in Inflammations, Pains, Rheumatisms.

The *Circuitus* in Fevers by Weeks is most certain and common, those by Quaternaries less.

If any matter be left after a Crisis Relapses happen on the critical days, and this is known by a quick Pulse, thirst, loathing of Meat, or a Tumor of the *Viscera*, and if the Fever does not cease after sweat, but the Urine continues high, a rigor in a Fever is a sign of the critical sweat ensuing.

Abscesses do not happen commonly in those Fevers where there are rigors, nor where the Pulse is great and vehement.

## C H A P. XV.

*The Cure of Hemorrhages in which the Pulse is great, quick, frequent, at first, but if profuse, small, languid, slow.*

**T**H E Pulse depends on an Effervescence of Humors, which puts the circulation into a quicker motion, and the Causes of this Effervescence are,

1. The fulness of Blood, suppression of *Hemorrhoids* or *Menses*.
2. The Saltness, Acrimony and Serosity of the Blood.
3. Obstructions of some particular Artery or Veins, and which makes the circulation run faster in other parts; and this produces the Vomiting of Blood in the *Splenetic*, and disorderly fluxes of the *Menstrua*, and spitting of Blood from the Lungs.
4. The disorderly motion of the Spirits in the Hypochondriack and Hysteric, which is chiefly compos'd by Opiates and the Cortex.
5. External Accidents, as Venery, Exercise, Falls, Blows, Vomiting, lifting of Weights, Shoutings. The

1. The great and frequent Pulse indicate Bleeding according to the Plethora and Effervescence.

2. The Serum must be purg'd oft by Lenitives, which do not heat, as Manna, and infusion of Rhubarb, Creme of Tartar, Milk Glysters, Purging Salts.

3. The *Hæmorrhages*, from obstruction, must be cur'd by *Sal Martis*, Steel Waters, and bitterish Acrids.

4. The Alteratives must cool the Effervescence.

1. By Acids, Tincture of Roses, Syrup of Verjuice, the juice of *Bellis Minor*, syrup of Coral or Lemons in Water.

2. By the *Acerbes*, Plantane, brook-Lime, and Nettle-juices expressed, syrup of Purslane, or syrup of spotted Arsemart, juice of Polygonium, *Semper Vivum*, Rubus, Hyssimachia, Tamarisk, Cypress-Nuts.

3. By Watery Liquors, Asses-Milk, Steel-water, Milk-diet, Emulsions, Vulnerary Decoctions.

4. By the mucilaginous Decoction of Cumphry, Purslane, Prunella in broths, dissolv'd Gum-tragacanth, Arabic, each ʒij. in Purslane-water lbij. ad syrup of Cumphry ʒiij.

Decoction of Snails with Milk, and the white of an Egg, sugar of Roses, and Starch for a Linctus.

Deco-

Decoctions of Althea in Emulsions, *Good-Friday* Bread in Milk, the Glue made of Wheat by the Book-binders, in a Linctus.

5. The Effervescence must be stopt by the Cortex and Opiates, mixing 6 drops of *Laudan.* with 3ss. of the Cortex in every Dose.

When the Pulse grows languid and slow, we must,

1. To stop the Flux by Stipticks, grumous Medicines and Opiates.

Syrup of Purslane ʒiv. *Bol. Terra, Japonica*, Gum Tragacanth ʒiss. make a Linctus.

Powder'd Galls in Beer, *Lapis Hematidis*, or Coral, or *Terra Sigillata*, Bistort.

Decoction of Oak-Lungs mixt with Milk, take conserve of Hipps ʒij. *Crocus Martis*, Coral, *Diatrion Santallon ana* ʒij. syrup of Poppies.

*Spongia Cynosbasti* ʒj. dose 3ss. or boil it in pectoral Drinks, take conserve of *Roses* 3ss. *Crocus Martis* ʒj. *Laud. Liq. Cyd. gutt.* xv. *Sacch. Saturni gr.* ʒ. make a Bolus.

Decoction of Saunders, Irish-slate, and conserve of *Roses* in Contusions.

Decoction of Oak flow or Willow Bark, Pimpinell roots, Potentil, Plantane, Millefoil, Polygore, Equisetum, Tormentil, Pentaphyll, Veronica, Strawberry-roots, Nymphaea, Quinces, Services.

Alom 3ss. in Claret with Sugar and Bloodstone; or

Alom



Alom 3j. *Sang. Draconis* 3ij. powder, and divide into 6 Doses, take one once in four Hours.

The Diet must be Viscid, Mucilaginous, Gelatinous Broths, Jellies, Fish, Glew, decoction of Isin-glass; Frogs boil'd in Broth, gum Powders, suck Gum Arabic till t̄bj. be swallowed.

The Opiates are necessary; Seeds of Poppies and Henbane each 3ij. conserve of Roses ʒiss. syrup of Poppies, mix them.

Use syrup of Lettuce at Night.

2. When the Flux is stopt, the languid and slow Pulse must be rais'd by Digestives and *Sal Martis*, and the salt, or viscid, or watry state of Humours, must be corrected to prevent the return, and we must avoid all occasions of an Effervescence, as Venery, Wines, Acrid Meats, great Exercise, Anger, salt Diet, and fulness.

The Diet in the Hæmorrhages must be cooling and binding, 3j. of Bole in Milk t̄ss. with sugar of Roses ʒss. or in Butter-milk, Rice, flower Meats, Asses-milk, Flummery, New Cheese; use all the crude Olera, as Borrage, Cumphry, Plantane, Lettuce, Purslane, Cichory.

Use Barberries, Blackberries, Sloes, Bilberries, Omphacium, Acacia, Pears, which are all *Acerbes*.

Stiptic Baths are made of Smith's Water, decoction of Oak-bark, the Cores of Pine, or Willow. Exter.

Externals for bleeding at Nose.

1. Frontals of Acids and Stiptics, Posca, or Bole, Alom, *Sanguis Draconis*, white of an Egg and Vinegar, Frog's Spawn-water, and *Sacch. Saturni*.

2. Put *Laudanum* and Vingear up the Nose; dissolve Alom and Vitriol each ʒj. in Water 2 ounces to inject.

Stop the Nose with green Moss, or a Tent, dipt in Solution of green Vitriol.

Cut a Sponge to fit the Nostril, put a Quill thro' it, and dip it in the decoction of Gall, Vitriol, Alom.

3. Put the Feet into warm Water, in which Bay Salt is dissolv'd, immerse the Body into cold Water, or lap it in a Sheet dipt in Water or Vinegar, apply Vinegar to the Forehead, Temples, Neck, Stones, Pulses, add Nitre and juice of *Semper Vivum* to the Vinegar, receive the fumes of Vinegar into the Nose.

4. Ligatives, bleeding in the Foot, Cupping in the Neck and Thighs.

Use the decoction of Bistort-roots for Hæmorrhages in malignant Fevers, and this Frontal, Rose-water ℥ss. Vinegar 2 ounces, Bole ʒj. the whites of 2 Eggs, or *Aq. Spermatis ranar* ℥ss. *Sacch. Saturni* ʒj. Camph. ʒj. for a Frontal.

Hæmorrhages on the 4th make difficult crisis.

The swellings on the Spleen, and bleeding at the Nose, are on the same side, we bleed in the left Arm for Spleen Diseases.

A great Fever, with spitting of Blood in great quantity, and pains in the Breast and Back, oft die in 14 Days, unless the spit be digested in 44 days; and they oft become delirious at last.

They oft bleed at Nose who are pale and black, or yellowish Hair, or pale green, as Chacecticks, the Blood may be incrassated by Galls or Alom, but Mucilages temper the Acrid Blood best.

Bleeding is good for the Sanguine, but it makes the Cachectic Hydropical.

If the *Menses* be discolour'd, 'tis a sign they want purging.

If they flow by the Nose, bleed in the Foot.

Dropping of Blood from the Nose, is a sign of the Heads being full of it in Fevers.

A Delirium or Convulsion, after a great flux of Blood, is dangerous.

The Pulse is weak and intermitting, by the flux of the *Menstrua*, in great quantity.

The Old Physicians had good reason for bleeding in the right Arm, for the Diseases of the Head, because the right Axillary Artery arises from the Jugular Artery on that side; and they bleed for Diseases of the Spleen in the left Arm, because that Artery arises from the Aorta, directly against the  
left

left Ventricle of the Heart, and it may be for this reason the *Chinese* say the Pulse is greatest in the left Arm, and on the diseased side the Pulse is most affected, which is true in Inflammations; the Old Physicians bled in the *Salvatella* that Hypochondriacks might not be fainty, as by bleeding in a greater Vein they are.

In a Lethargy, with violent pains of the Head, I observe the Pulse greater and undous on the right Arm, and the obstruction of the Carotid Arteries in that sleepy Disease, diverts the circulation thro' the Axillaries, and occasions the Pulse to appear great and undous; but is also soft, because a great quantity of Blood is lodged in the Head, the oppression of the Head makes the great Pulse slow, or undous and weak.

---



## C H A P. XVI.

*The Cure of the exceeding Pulses, great, frequent, quick, in hot flatulency in the Stomach.*

**A**LL these Pulses rarifie the Blood and Spirits too much to a windiness, and in the *Primæ viæ* this produces Eructations, Gripes, Inflations, putrid Tasts, and a nidrous Ruētus, which is improperly called a Crudity, because the Bilious or Salt or Bitter Acid ferment of the Stomach over-digests all Meats.

In the Blood this hot flatulency produces an *Ephemera*, and Effervescences upon changes of Weather, or Errors in Diet.

In the Nerves this hot flatulency causes wandring Pains, convulsive Motions, Tremblings, Vermiculations, beating in the Flesh, Lassitude, in the Nerves Convulsions, in the Brain, Deliriums, Vertigo's, Hysteric and Hypochondriac Fits, Epilepsies, Asthma's, Hysteric Cholics, and other windy Pains.

All fermented Liquors disagree, and all hot Regimens, the hot *fatid* Ruētus, as well as the Thirst, Watching, high colour'd  
Urine,

Urine, depend on an Effervescence of Humours, made by a quick and frequent Pulse, and whatsoever accelerates the Pulse and produces the hot Winds.

An hot acrid Diet, too much Exercise, hot Passions, stoppage of Perspiration, and other natural Excretions, want of Sleep, Fasting or Surfeits, hot Air, hot Baths, Pain.

Anger makes the Pulse great, frequent, vehement, but Sadness makes the Pulse slow, rare, languid and small: In Anger the heat is great, not acrid, in Fear more acrid than great.

For the Cure of the hot flatulency in the Stomach, we must reduce the exceeding Pulses to their natural greatness, quickness and frequency, by a cool Method and Evacuations.

1. We must Vomit up the fermenting Humours from the Stomach, and purge them off by Nitrous Water, purging Salt, Creme of Tartar, or Aloetic Pills.

2. The *fetid* Spirits which are mixed with the Blood or Spirits from the putrid Mass in the Stomach must be discussed, by Exercise, tepid Baths, or moderate Sweats, or else compressed and corrected by cool Diet, and Medicines prescribed for stopping the exceeding Pulses, especially by

1. The Acids, as *Gas Sulphuris* in water, dulcified spirit of Niter in all Liquors, decoction of Tamarinds, and all the Tartarous

rious Diet of Fruits, Verjuice, Vinegar, Cyder and drane-water.

2. By *Salso-Acids*, as *Sal. Prunell.* *Sal. Armoniac* in water-gruel, or in form of Salts made for digestion, or take Sea-salt in fair Water after Dinner.

3. Watry Liquor, Toast and Water and no fermented Liquors, decoction of Hartshorn, or Ivory, or Sassafras  $\text{zij}$  in  $\text{℥viij}$ . of Water, Steel or Bath-water, Wheys, Asses-milk, Skim-milk and Water, drinking Milk-waters, use boild and roasted Meats, avoid all sweet fermenting Diet.

4. The Body must be kept open constantly, purging Salts, *Daffy's Elixir*, *Scotch Pills*, Creme of Tartar in Broths; give Oyl in a Morning, and eat no Bread in a Morning, and little at other time unless it be washed.

When the Stomach has been too much abused by a hot Regimen, mix Carminatives and Acids, as *Diaspoliticum* in Broth: The disagreeableness of hot Diet, shews the over-digestion and high rarification of Humors, in Pains, Hypochondriacs, Hysterics, Epilepsies, Asthma's; these Diseases have a hot flatulency, and a quick and frequent Pulse, and they are not produc'd by pure Acids, which is only the effects of a great rarification, and Effervescency, because spirituous Liquors become Acid by any great fermentation, and then turn into Vinegar, and there is a bitterness as well as sourness in  
the

the Stomachs of the *Atrabilarious*, Hypochondriacs, and Hysterics; and they have oft an nidorous Ruſtus like ſtinking Fiſh, or fry'd Oyl, and ſome ſpit Fat which flames in the Fire.

The difference of the Hysterics and Hypochondriacs is only in the Parts moſt affected; in Women the Belly and Breſt, but in Men the *Atrabilis* infeſts the Stomach and Spleen, and as the Acidity prevails over the Bile.

\* All theſe hot flatulencies end in the cold Melancholy; in the quick and frequent Pulse uſe the cooler method, in the ſlow and rare Pulſes uſe the hotter.

The Pulse is alike in the Hypochondriacs and Hysterics, and has the ſame Indications, to raiſe the weak and ſmall, and to ſtop the quick and frequent, by a mixed method of hot and cold, which I will deſcribe in the Cure of that Pulse.

In Hypochondriacs the pains at the Stomach, and Spleen, and Swellings, are from the grumous black Blood ſtagnating there; the Acidity binds the Belly, and creates the black Humours, the Spirits are reſtleſs, peeviſh, fearful, fainting, when the Pulse becomes rare and intermitting.

The Cauſes of theſe Symptoms are immediately the Pulse, which produces the *Atrabilis* very quick and frequent, and that depends upon high fermentation or obſtruction



of the melancholic Excretions, and hot Diet, Fasting, salt Meats, Fen-water, Passions, Cares, Study, Anger, produce the frequency of this Pulse.

The Ferver of Humors requires,

1. A cool Method and Diet to stop the Pulse, as Watry-diet and Water-drinking, Whey, Water in which Iron is quenched.

2. The mucilaginous Bitters are Fumitory, dock Bitters, Broom, Cichory, to cleanse the hot *Salso-Acids*, and the gentle Antiscorbutick, to help any obstructions.

3. The Styptics, as Polypody, Ceterach, Tamarisk, Ash-bark, stop the Effervescences of Humours.

4. Opiates are necessary for the hot flatulency in the Nerves, and want of sleep.

*Galen* cur'd the Hypochondriacs by temperate Baths, and moist Diet, we must use no Roots or Fruits, because windy, nor fermented Liquors, because the hot melancholy Winds are produced by a fervor of Humours.

*Aetius* gives a spoonful of *Acetunc Scyllitic.* at Night for Melancholy, or a spoonful of Vinegar then against the rising of Vapours

5. The stagnation of Humours requires opening Splenetics, as gentle Vomits, and Aloetic Purges, Pills of Ammoniac, Aloes, Salt of Tartar, *Velmartis* extract of Gentian, often bleeding, and Acrids, Antiscorbutics,

butics. Take juice of Scurvygrafs, Water-creffes, water Parsnep each ℥j. salt of Tartar ʒss. Sugar ℥iiss. make a syrup.

Take Elder-flower water and Aron each ℥j. *aq. rhab. camp.* ℥ss. spirit of Scurvygrafs and *Sal. Arm.* each ʒss. syrup of Scurvygrafs ʒiv. give ʒij in Beer.

Take rhenish Wine ℥iv. juice of Scurvygrafs, Water-creffes, Brook-lime, Wood-forrel each ʒiv. Horse-radish, *enul. camp. orris* each ʒiss. 2 Nutmegs, dose ʒiij. in a Morning.

The Caustics, as Aron-roots.

The Bitters, as Gentian, Elixir Antiscorbutic, volatile and fixt Salts, Chalybeats; all these are proper for the obstructions, when the Blood becomes grumous and cool, and the Acidity prevails and the Urine is pale.

Boil Juniper-berries and Wormwood each Mj. in Whey ℥ij. to drink in a Morning.

Foment the Hypochondria with Discutients and Emollients.

In a very hot soariness, and when they become Hectical after, Milk is necessary, drink steeld Water and Wine.

This is an old Medicine for the Hypochondriac in Heart-burning, or Epilepsy; and *Cardialgia* in *Trullianus*, Take Fennil-roots six ounces, Vinegar ℥iiss. Aloes three ounces, Hony ℥iiss. make an Oxymel dose one spoonful to three. Foment with Comin

and Penny-royal in Vinegar, and add Alom. Use it with a Sponge to Inflated Stomachs.

For Tumors from inflations, a great Cupping-glass to the Belly twice or thrice without Incision. Foment the inflated Limbs with a Lixivium, or Vinegar, or Wine, or Niter; Windiness is bred thro' want of heat in the cool Pulses, or thro' black Matter much rarified, as in hot Winds.

Bleeding and Purging evacuates the Matter of Tumors, Frictions, Cupping, Vomits, Exercise. Hot Baths help the motion of Humors, and acid Medicines; Abstinence accidentally evacuate.

In the end of all Diseases we use the hottest Medicines, because the exceeding Pulses in hot Winds, often degenerated into cold Winds, the Pulse being stopt by the Convulsions on the Heart by the hot Winds.

## C H A P. XVII.

*The Cure of small, slow, rare Pulses in the cold melancholy Winds.*

**T**HIS Pulse is the immediate Cause of the cold Melancholy, and all the Symptoms of this Disease depend on this Pulse; and whatsoever produces this Pulse, produces the cold melancholic Humour.

The Symptoms in the Blood, which depend on a slow Pulse and slow Circulation, are Hamorrhoids, Varices, Sighing, coldness in the Extremity; the pale Water which depends on the separation of the Serum from the Blood in a slow Circulation, the Blood becomes black and grumous for want of due Circulation, and then it stagnates in the Spleen and Veins of the Mesentery, and there produces Pains, or black Vomits and Stools, or Piles, Bleeding, black spittle, and in the Skin blackness in the Countenance, and about the Eyes, and black Urine; this Melancholy is without a Fever, because that has a quick and frequent Pulse.

The Respiration is slow and rare, which shews the motion of the Blood to be so too.



The symptoms in the Stomach are frequent eructations of Wind, and Acid Humours, binding of the Body, windy Inflation of the Hypochondria, the sour Ferment of the Stomach, being secreted from Acid Blood.

The Symptoms in the Nerves, are confining the Thoughts to some particular Idea represented and fixed by some Passion, of Fear, Sadness, Love, Frights, Cares; these produce the desipience joined with some of these Passions, they constantly think on some particular Object, and neglect all other Affairs; the smallest things appear great and hard, their Eyes are fix'd, look fierce, and judge falsely of those things which relate to the mad Idea; there is a watry acid Animal Spirit produc'd by a thick stagnating Blood, not well rarified, this Acidity hinders Heat, Light, Flame, and the due motion and rarification of the Spirits; and this crude and turbid Spirits falsely represents all Objects, and this windy indigested Spirit produces restlessness, and weak, languid Spirits, which moves the Heart weakly, and in these Fears the Heart suffers a convulsive Contraction, and then there is an oppression, and Hypothimia produc'd, or a Palpitation, Melancholics and Morose, Anxious, Angry, fearful Dreams; they have a weight in their Heads, want sleep, fly Conversation, and constantly fear Death, because their Heart  
is

is hindered in its motion by its Constriction, which Fear causes.

The Causes which produce this Pulse, either alter the Animal Spirits or the Blood, and they thereby change the Pulse.

1. Some Passion ordinarily produces the great agitation of the Spirits, and then they evaporate and produce small and weak Pulses, and the Spirits having their Oily parts spent, become Acid and Vitriolic, and this depraves the Blood, and then the Melancholy begins in the Head; and if this agitation of Spirits continued, it produces the quick and frequent Pulse in the *Atrabilarious* and *Maniacs*, and Epileptics, and Hysterics, Phrenetics, and Epileptics, to which Diseases the cold Melancholic stupidity succeeds; as those Diseases convulse the Heart and stop the Pulse, or evaporate the Lympha, and so produce this cold and dry Temper, for the Blood is grumous for want of motion and heat, and 'tis of a black Colour by its Vitriolic Acidity.

In Melancholy from Passions, the Pulse is obscure, contracted, inconstant, unequal, deficient and vermicular.

Passions first produce want of sleep, turbulent Dreams, noise in the Ears, at last Stupidity, Morositis, Taciturnity, Suspicions, Stupors, in any part, as the hot Humours evaporate.

2. After

2. After Epilepsies, Mianias, Phrenitis, long Fevers, this cold Melancholy succeeds. In these Diseases there is an *Atrabilarian* Temper of Blood, which is from a mixture of bitter and sour; and this is hereditary, or produc'd by a Diet of those Tastes, retention of *Semen*, *Menses*, Haemorrhoids, stopping of Issues, and these were imputed to the Womb, Stomach and Spleen, because there is oft a Pulsation, Pain, or Tumour there, from stagnating Blood, and a pain in the Back and Sides.

Epilepsies succeed or proceed Melancholies, which shew a great affinity in the same Temper of Humours.

The driness in Melancholics proceeds from the loss of Serum, and the coldness from the stop of Circulation, but because Melancholy succeeds hot Pulses and Diseases, some *Atra bilis* and hot Humours must be mixt with the black grumous Blood, and in that and the agitation of confus'd turbid Spirits, the delirious Fancy are continued till that ends in a stupidity or foolishness.

3. Great Evacuations produce this Disease.

The small Pulse, and the rare, and slow, indicate such hot Medicines as promote the Pulse to a greater magnitude, frequency and quickness; such are

Vomits

1. Vomits, which excite the Spirits, move the Blood, and evacuate the Vitriolic and slimy Humours, these are very beneficial to Hypochondriacs, as *Ipecacuana* 3ss. or *Tart. of Emetic.* gr. 4. but violent Vomits oft produce this Disease, as well as all other great Evacuations by Purging and Bleeding.

2. Moderate Bleeding in the Foot, Piles, Neck, and Cupping in the Shoulders, evacuate the melancholy grumous Blood which stagnates and oppresses or retards the Pulse and Circulation.

3. Tepid Baths must be sat in till they be cold, and warm Water poured on the Head; these will help the Circulation as well as Exercise and Friction, and Unction with hot Oyls; Plaisters to the Spleen help the Circulation thro' it, the change to a hotter Air.

4. The thick Blood must be diluted by such Medicines as will also irritate the Circulation, such are Steel or Bath-waters, Wood-drinks, Steeled Liquors, or Tincture of Steel in them, Whey with Fumitory, Dandelion, and a moist'ning Diet is good.

5. By hot Tafts we must promote the Circulation, and excite the free motion of Spirits; such are Volatile Salts, Steel, Vipers Flesh, Castor, Amber, *fetid* Gums, the Diet must be moderately vinose, to supply the loss of Spirits, and the Aromatics and Cephalics do the same, as Clary, Pennyroyal,



royal, Tincture of Amber-greece, Cubebs, Hypporass Wines, Spec. Diamb. in Lozenges, Spirit of Lavender, Saffron, Amber-greece, spec. Letificans, confect. Alchermes, with *Lapis Lazuli*, *Spir. Salis Volatile Oleosi*, Oyl of Cinnamon, Anniseeds, Musk, Camphir. The four Chyle must be corrected by Steel, Bitters, Salts, and testaceous Pouders, or Calces.

The Morning Pulse in a Melancholic Man's 65, or 67 in a Minute, without alteration by common Diet, or in the Vapor Fit and Vertiginous, but a Pipe of Tobacco increas'd it 18 beats, and Ale and Wine rais'd it 5 or 6 beats. This Person was troubled with great Hypochondriac Winds; by this I observ'd that the low Pulses have least alterations in a Morning, but by hot Diet they may be rais'd; and 'tis certain that *Atrabilions* becomes cold Melancholic, and they by violent Passions, *Atrabilarians* again:

5. The Body must be constantly kept open by Pills of *Ammoniacum* at Night 3fs. or Glysters.

6. The disorderly motion of Spirits must be compos'd by Opiats.

7. Acrids, and Bitters, and *Fatids*, and all the hot Diet, Flesh-meats and ferment-ed Liquors, Coffee, Chocolate, salt Diet are putrid; and all actual hot Liquors raise the Pulse.

Na-

Nature oft cures Melancholy by Piles, black Vomits, and Stools, or by black Urines, flux of *Menses*, Scab and Quartans.

Spring and fall the Deliria affect most, because the Tumours effervesce in the Spring, and some Vitriolic Humor then infects the Spirits, and in Autumn and Old Age, the Pulse grows rare and slow and small.

Stopping the Pores by moderate Cold Baths raise the Pulse, and all Evacuations must be stopt thereby.

This is the best Advice against Melancholy. *Qui molesta quæ & patienter ferunt, exercitius utuntur tempestivis & in victu sobri sunt difficilime in Morbos incidunt.*

A Melancholy, long continued, ends in Foolishness, Apoplexy, Fury, Convulsion, Palsy, when it turns to an *Atrabilis* by great agitation of Spirits, the Fury and Convulsions are bred (and the Pulse is quick and frequent) but from the sifziness of Humours the Apoplexy, and Palsy, in which the Pulse is more slow and rare, and by these Pulses we know the tendency of the Disease.

An inveterate Melancholy is rarely cur'd, and if they be very passionate, there is danger of a *Mania*; an hereditary Melancholy is not curable, and very difficultly if it be from a Fright.

In

In Melancholies, 'tis an ill sign if they be averſe to Meat and Medicines, if they be weak, want ſleep, become Epileptic, Maniac, deprav'd, blind, or deaf, and the reaſon is, we muſt cure one Paſſion by the contrary, Love by Indignation, Hatred, and Sadneſs, by Pleaſure and Muſick, Company, Travelling, Recreations; both the Body and Mind muſt be imploy'd in the buſineſs of a Family, ſtudy of Mathematics, Chimiſtry, Gardens, Buildings.

The Fearful, Angry, Impatient, Delicate, are ſubject to Diſeaſes of the Mind, and Conſtancy, Fortitude, Patience, Prudence and Tranquility, prevent or cure them.

Diſeaſes of the Mind deprave the Appetite, breed Windineſs, and Chronical Fluxes, as Diarrhæa, *Fluxus Menſium*, *Fluor Albus*.

A ridiculous Delirium requires a ridiculous Remedy; Melancholy from evident Cauſes is more eaſily cur'd.

## C H A P. XVIII.

*The Pulse in the Cholera, or Vomiting, Nauseousness, Poison, thickens, is small, languid, moderately quick, very frequent.*

**T**H E Evacuation of Humors makes the Pulse small and languid, the heat and the effervescence of the Blood makes them quick and frequent, fainting and the coldness of Extremities depends on the small languid Pulse, and so does the Cramps and cold Sweats in the *Cholera*.

The Cause which irritates the Vomiting in a *Cholera* are,

1. The Corruption of Fruits, as Melons, Pumpions, or Surfeits from variety.
2. Poisons, or strong Purges and Vomits.
3. A malignant Fever, or an Effervescence pushes the biliose Humors into the Stomach thro' its Glands.

The quick frequent Pulse indicates the evacuation of the Cause irritating it, as Poisons or corrupt Meats, by oily Vomits, Glisters, or by warm Water; make Glisters of Chicken-broth, and vomit by the same.

The



2. The small languid Pulse indicates that the Vomiting must be stopt by Opiats Morning and Night, after full Evacuations, and when the Pulse is very weak give ʒiij. of *Disco-dium* in Glysters.

The Poisons must be purg'd off by *Cassia* and Salt of Tartar, or *Manna* and Tamarinds infus'd in Whey.

3. The frequent Pulse continuing after Evacuation indicates the cooling of the Humors or Poisons,

1. By Acids, Vinegar ʒj. Water ℥j. Lemonade; use Oxycrate for a Glister, give *Merc. dulcis* ʒss. with Conserve of Roses, *Laud. gr. j.* Oil of Cinnamon and Syrup of Quinces, *Spir. Vitriol.* 10 drops in Broth, Tinct. of Roses or Oil of Vitriol, Syr. of Violets, and Water for a Julep; *Elixir Vitriol. spir. Nitri dulcis, Crem. tart.* Coral Powder, ana ʒij. a nauseous Sweetness is cur'd by Acids.

2. Salso-Acids agree with all Humors: Salt of Wormwood ʒij. syr. of Limons ʒvi. Oil of Cinam. *gut.* iij. Take a Spoonful once in three Hours in *decoct. alb.* add liquid *Laudanum* to the Night-dose, with the Decoction of Wormwood.

3. Oils temper Poisons, as fat Broths, Butter-milk, Emulsions with *Terra Sigillata*, an emollient Glister with *Cassia*, Lin-seed, Nitre and the Yolks of Eggs.

4. Mucilages prevent Erosions, as Mucilage of Quinces, or *Gum tragacanth.* and *Disco-dium* mix'd.

5. Ab.

5. Absorbing Earth, *Terra Sigillata*, or Raddle in Milk, or Chalk in Water, or *Lixiviums*, Crystal, with Oil of sweet Almonds.

6 Bitters cleanse and strengthen the Stomach, Wormwood Mj. steep'd all Night in fair Water ℥j cold, the inward Skins of Gizzards, Venice-treacle.

7. Aromatics, Styptics and Narcotics stop the Flux and strengthen the Stomach, Conserv. of Mint. ʒj. *terra Sigillata* ʒiij. syr. of Quinces ʒiij. liquid *Laud. gutt.* 30. Oil of Cinam. *gutt.* 3.

Give astringent Wine and Mastic powdered, or Quince-wine, Myrtle-wine, Decoction of Mastic or Quinces, Mint-thea, or juice of Mint or Quinces one Spoonful, Balsam of *Peru* 3 drops in a potched Egg. Boil Lettuce, Purslane and Plantane in Chicken broth, add the Yolk of an Egg and *Theriaca* for a Glyster.

Take small Cinam. and Mint water, ana ʒvj. *aq. Epidem.* ʒiij. *Dioscord.* ʒij. syr. of Quinces ʒiss. *Laud.* gr. 2.

Syr. of Coral with decoct. *album* and Oak-Bark boil'd.

Take *Crocus Martis astring.* ʒj. *Sacch. Saturni* gr. 3. *Laud.* gr. 1. Conf. of Roses ʒss. syr. of Quinces.

Take Oak-bark powder'd ʒj. syr. of Quinces ʒiij. Oil of Cinam. *gut.* 3. liquid *Laud.* *gut.* 40.

8. The Diaphoretics are good in *Cholera* from Fevers, with Opiats, as volatile Salt, *Diafcoridium*.

9. Bleeding prevents the return, and to dilute the choleric Humors by *Bath* or Steel-waters, and purging Salts, or hot Teas and Milk.

If a Vomit works too much, give Bread and Wine or Milk and Bread, or *Crem. tart.* or Salt in Broths 3ss. give a Glyster and Opiats and Plaister to the Stomach of Bole and Mithridate, and Oil of Mace.

For the Scorbutick Vomiting of a saline Acrimony, after Bleeding, Vomiting and Purging, give these Alteratives of the saline Humors.

1. Milk with cool Antiscorbutic Juices, but all Acrids offend.

2. Use the Purging and Steel-waters and *Bath*-waters.

3. Correct the saline and vitriolic Acrimony by the calces and testaceous Medicines and Bitters, and Steel, but the saline requires Diluters sub-Acids, *Crem. tart.*

Nauseousnesses is the Constriction of the Stomach by the bilious or four Humors irritating it, but Vomiting proceeds further to a Convulsion of it.

The Inflammation, *Schirrhus*, Excoriation, stop of the *Pylorus*, or hysteric and hypochondriac Convulsions produce Vomiting.

Vomiting

Vomiting is also produc'd by the Stone, Cholic, Wounds on the Head, Liver, Spleen, Mesentery-Glands obstructed, *Menses* stopt, and this is by consent from other Parts, and is cur'd as they be.

Purge the Humors down with *Elixir Salutis* and *Laudanum*, or *Pill. Stomach*, ʒss. with *Laud.* gr. j.

Ill Smells subvert the Stomach, and all Aromaticks please it; avoid fat and oily Meats, use Rosin Wines, rough Wines, and eat roast Meats.

Apply outwardly Aromatics and Styptics, juice of Mint and old Leaven, Wormwood pounded and Vinegar hot, add Cloves, Mace, Nutmeg.

Apply a Sponge dipt in hot Vinegar, or a Flannel in Brandy; give many Glysters at first, and vomit till all the Humors are evacuated.

Drink nothing but the white Decoction, with Barly Cinamon-water.

Put the Hands into cold Water to stop Vomiting.

Make Broth with Bugloss and Cichory Roots, ana ʒss. boil'd in Chicken-broth, add *Crem. tart.* ʒj. *Sal tart.* ʒj.

Take all things hot, not tepid, Broth well salted stops Vomiting, use Claret and steel'd Water.

The Acrimony of Meats is best corrected by Acids and Oils, sweet Tastes, Emulsi-



Broths; the acid Acrimony by Barly-Sugar, Honey, Raisins, Brandy-spirits, testaceous Powders and Calces: the aromatic Acrimony is corrected by Acids, Oils and sweet things, the falso-acid Acrimony either by Oils, Acids, or Lixiviums, and Calces.

Spirit of Salt cures a Brass-favour'd Taste, which is nauseous.

The *Cholera* cures the *Febris Lypiria*.

Those Fevers which have a Loathing and Pain at the Stomach, and much Spittle, are judg'd by Vomiting, but those who have Eructations, Wind and Inflations, are judg'd by Loosness, the part most affected shews which way the Crisis will tend in Fevers; so if the Face be red, the Temple-Arteries beat with great Pain, the Fever will be judg'd by an Hæmorrhage.

The *Cholera* oft is join'd with an intermitting Fever, for which Bleeding and the *Cortex* are necessary, as soon as the Vomiting is stopt.

No Purges must be given in the *Cholera*, nor strong Vomits, but one by warm Water or Tea, because the languid and small Pulse will not bear them, and they will irritate all Evacuations too much.

## C H A P. XIX.

*The Pulse of the Hydropic is small, frequent, subtense, and a little hard; In the Anasarca soft and undous.*

**T**HE small Pulse is from the Evacuation of the *Serum* into the Cavity, the frequent from the Hectical Heat, the subtense from the Obstruction of the *Viscera*, and compression of the great Arteries.

The Pulse is the same in the Tympanites, but not so weak, because the Circulation is less hinder'd by the Water which lies betwixt the Muscles of the *Abdomen* and *Pelvis*, then by that in the Cavity of the Belly in an *Ascites*.

The Thirst, high-colour'd Urine, Extenuation, depend on the Hectical Pulse, and the extravasated *Serum*, the *Dyspnea*, Tumor of the Feet on the slow Circulation, the Tumor of the Belly on the fulness of *Serum*.

The soft undous Pulse shews the serous *Cachexia* in the *Anasarca*.

1. The chief cause of the Dropsie *Ascites* is, the Tumor of the *Viscera*, and that stops the Circulation of *Serum* thro' the Lymphatics, and so breaks 'em.

2. The

2. The Rupture of the Laſteals is made by the Tumor of the Meſenteric Glands, which comprefſes them.

3. The *Serum* is ſometimes evacuated thro' the conglomerate Glands into the Cavity.

4. Whatſoever decays the Circulation, produces the abundant quantity of crude Chyle and *Serum*, as Water-diet, great Evacuations of Blood, and chronical Diſeaſes, and the want of due Evacuations of *Serum* by Sweat and Urine, makes the *Serum* to abound too much: The *Ascites* ſucceed an *Anaſarca*, ſchirrous burning Fevers, long Jaundice, weak Diſteſtion, Dyſentery, becauſe theſe abate the Circulation in long continuance; the Dropſie is either lymphatic from *Serum* abounding, or icterical from Obſtructions of the *Viſcera*.

When the Pulse is ſoft and undous, it indicates the Evacuation of *Serum*.

When the Pulse is conſider'd as hard and tenſe, it indicates the opening the Obſtruction of the *Viſcera*.

The ſoft or ſmall Pulse indicates the uſe of the hot Diſteſtives, to help the Circulation; the frequent Pulse indicates the cooling Method for the Heſtic, and will not bear purging.

The *Serum* is evacuated by Purge, which work briskly in the lymphatic Dropſie, or by Vomits in the icterical from the Obſtruction

tion of the *Viscera*, and Glysters of Turpentine Urine, *Coloquintida* or *Cambogia*.

1. *Sena* purges with Buckthorn best, evacuates the *Serum* after Fevers, and Jalap xv gr. may be added; or thus, Infuse *Sena* ℥ij. *Sal tart.* 3ss. *Spir. vitriol. gutt.* 15. in Cichory-water; let them stand cold.

2. Resin of Jalap ℥ss. *mer. dul.* ℥j. *Antim. diaph.* gr. v. mix them, give it in a Spoonful of Wormwood-wine, in the Dropfie from Obstructions.

3. Burning Acrids, Juice of Orris-Roots 3ss. Syr. of Buckthorn 3ss. *aq. mirabil.* 3j. or Juice of dwarf Elder-roots; in the same manner give *Gambogia* gr. 15. in *Dioscordium*, and take Broth after it with Juice of Limons Infuse Orris roots 3j. in Whitewine ℔j. for two Doses, with Jalap ℥iij.

Give Roots of wild Cucumber 3j. in Claret ℔ij. after to 3iij. give 3j. three days, after to 3iij. Give *Elaterin.* gr. 3 or 5 in *aq. mir.* and Syr. of Violets; or else give it sweetned in Milk, or with Mastic Pills ℥j. or *Aloephagina* 3ss.

2. The *Serum* is evacuated by Urine, and these agree with the hot Dropfie from Obstructions.

1. Take Nitre 3ss. in Rhenish-wine at many Draughts every day.

2. The Acerbs, sub Acrids and Acids; take Plantane Miv, *Hepatica*, Brooksim ana Mij pound, and expresse them with *aq. raphani compos.* ℔ss.



Take *acetum scylliticum* mix'd with Syrup *de 5 radicibus* and *aq. ephani*, one Spoonful every Night ; give Alom the quantity of a Bean, dissolv'd in Water, every other day, or for three days.

3. The falso-Acids ; sweet Spirit of Salt in Beer, Spirit of Tartar 3ij. in *Syr. de 5 radicibus*, drink Urine and Wine, or Cowpiss, mix Sea-water and Wine, a dram of Herrings powder'd in Wine, mix *crem. tart. sal prunel.* Salt of Tartar *ana* 3ij. Dose 3fs.

4. The sub-Acrids ; as Diet-drink of dwarf Elder-roots and Leaven, Broom, the *Daucus* Seeds

5. Acids ; Oil of Vitriol, diuretic Vinegars, Rue boil'd in *Posca*, *Anagallis flores*, *Purpurea* 3j. in Juice.

Mustard, Garlick, Onion, Pepper, Cloves, infus'd in Vinegar for Sauces.

These Diureticks are proper in the cold or serous lymphatic Dropsie, such is the *Anasarca*.

1. The sweet aromatic Acrids ; Fennel, Lovage and Smallage-roots, or boil Fennel-seed ℥ij. in a Gallon of stale-Beer, to half, give three Spoonfuls three times in a day with some ordinary Liquor.

2. The Cress-Acrids ; Mustard Wines, the Spirit of *Sal Armoniac* or Scurvy-grass, Nettle-seeds powder'd.

3. Caustic-Acrids ; distill'd Water of *Persicaria* or *Aron*, Squills, Wine, put Orris-roots

roots ʒss. in a Bottle of Ale for ordinary Drink, Garlick-wine, Aron-roots ʒj. in wine, Garlick in Water-gruel.

4. Turpentine-Acrids; Turpentine ʒij. Sugar ʒvi. mix them, dof. ʒij. with the Yolk of an Egg and Wine, *Enulacampane*-wine or Juniper-berries in the same, *Vinum Asarites*, *Resinatum*.

5. Bitter-Acrids; Wormwood Wine, or Tinct. of Wormwood, decoct. of *Guaiacum*, *Hiera picra* in Oxymels.

6. Acrids from Animals, *Millepeds* or Bees, Troches of Vipers ʒij. 4 Mounthes, the Mires of old Cheese, a Spoonful in stale-beer.

7. Use *Lixiviums* and volatile Salts.

3. The Digestion of serous Humours is help'd by Chalibeats, the bitter acrid fixed Salts, and Aromatics, and these must be us'd after the Evacuation of the *Serum*.

We may Sweat in the *Humours*; Riding helps the Digestion.

Use Soap dissolv'd in *Aqua-vita* to the dropical Legs.

No Dropsie can be cur'd where the *Viscera* are not sound.

A *Paracentesis* is not unuseful where the Dropsie succeeds another Disease.

In an *Ascites* Vomits of Squills do much good; hot Baths are injurious, but cold Baths do good.

Let a *Paracentesis* be made in the beginning of an *Ascites*, and after give strong Purges, or Vomits and Fomentations. In

In a *Tympanites*, after a *Paracentesis* Fomentation and strong Purges, as *Pil. lunares*, the Fomentation helps the hardness, and after all Evacuations, Steel and Digestives.

They who have an Inflammation or Schirrhosity on the Liver must bleed, as *Sponius* directs in his Comment on the Aphorisms.

Blisters pricking with a Needle, or Scarification on the part above the inner Instep, or *Scrotum*, or Thighs, *Hippocrates* and *Aetius* made Incisions on them. Use Frictions of Oil and Salt to the Hydropic Tumor.

In Dropsies from Fevers there must be a mix'd Cure; for the Fever the Cortex and cool Alteratives; the Fever must be first cured; for the Dropsie Openers.

An *Anasarca* which does not succeed any other Disease is not dangerous.

An Epilepsy is fatal in a Dropsie.

A Cough coming on a Dropsy is an ill sign.

A strong *Diarrhea* cures the *Anasarca*, but that usually kills the Hydropical; Ulcers are usually fatal.

An *Anasarca* follows Fevers, weak Stomachs, Dysenteries, Fluxes of the *Menses*, or *Hæmorrhoids*, and cold *Intemperies*; after chronical Diseases Consumptions, and then 'tis dangerous.

In a Dropsie from suppression of any Evacuation we must bleed.

We may bath in Salt-water for the Dropsie; Abstinence from drink, or drink Wine *thj.* in a day, eat dry Meats roasted.

These are ill Signs in the Dropsie, much Thirst, Fever and Pain, dry Cough, loss of Appetite, ill Colour in the Face, languor of Spirits, thick Urine, Leanness.

The Belly in Dropsies swells downwards, and the Face looks ill and pale, but in breeding the Face looks well, the Breasts swell, and the Belly lies more high, and the Urine thinner.

Cold nitrous, or cold salt, or cold sulphureous Baths agree well, and Friction, Wormwood-wine, Juniper-ale, or Broom and dwarf-Elder and Hore-hound.

Give *Merc dul.* gr. x. increasing iij. gr. till it salivates, or vi gr. with testaceous Powders in Pills, with Juice of Liquorish; it causes Spittle, Urine and sometimes Stools.

Neither Diuretics nor Purges can cure the *Ascites* or *Tympanites*, but *Anasarca*.

Exercise, Navigation, Stoves, Gestation, Frictions are commended; measure the Belly every day, use Abstinence for two days.

For Hydropic Tumors: dwarf Elder-roots and Savin *an.* Mj. Orris ʒj. Squill ʒij. Oil lbij. *Aq. vitæ* lbj. boil and add Soap ʒiv.

Take Goats-dung lbj. Elder Miv. Briony root ʒij. boil them in Urine, apply them to the Belly.



## C H A P. XX.

*The Pulse in the Jaundice, and its Cure.*

**G**ALEN observes that in the Jaundice there is *πορετοί καὶ φεικὴ ἐλαγχρὴ*. The Pulse of the Icteric, when there is no Fever, is less, harder, more frequent, not languid nor quick; 'tis less from the oppression on the Spirits, the obstruction makes it hard, the Bile makes it more frequent; if the Bile be Acrid it irritates a Fever, if more crude and undigested, the Pulse is not quick, but 'tis more frequent.

These Symptoms depend on the obstruction, pain at the Stomach, Inflammations, Schirrus, white Faces, yellow colour of the Skin, pain in the Limbs, want of sleep, Thirst, Fever, Nauseousness, yellow Urine.

The great quantity of Bile makes the oppression on the Circulation, and causes faintness; the temper of the Bile is known by the frequency of the Pulse, which is more feverish in great obstructions than in the small ones; therefore by the Pulse we must make two sorts of Jaundice, that with an evident Fever, that with an obscure one.

The

The hardness of the Pulse indicates the Cure of the Obstruction, the smallness of the Pulse indicates the Cure of the Oppression, the great frequency of the Pulse indicates a cooler method, the less frequency indicates a hotter method.

The Causes of the Obstruction in the Jaundice are,

1. The Glands of the Liver are obstructed by a cold Tumor, Compression, Inflammation, or Schirrus.

2. The Choler is ill prepar'd and viscid, or inspissate by Brandy-Spirits, and the Liver becomes Schirrus after Fevers, or the Choler is too crude and slimy, or petrified into a Stone.

3. There is a constriction in the *Secretory* Vessels by Cholics, by Hysterical Fits, and passions of Grief.

4. By the bite of a Viper the Body becomes *Prasini coloris*, from too much Bile.

5. The hot Regimen, Drinking and Anger, produce more Choler than can be secreted; this produces a yellowness without obstruction, and is Cur'd by Bleeding, Purgings, Acids, and Steel-waters.

6. The Jaundice is critical in Fevers.

The small Pulse indicates the Cure of the faintness in the beginning of the Jaundice.

In the beginning of the Jaundice we use Diaphoretics to force the bilious Serum into the Skin.

*Ve-*

*Venice Treacle*, Volatil Salt, Tincture of Saffron; Treacle-water, Vomits of Squills, or *Sal Vitrioli* in the hot Jaundice, and *Emetic Tart.* in the cold.

When a Fever or Inflammation are joined with the Jaundice, Bleeding is necessary, and the Pulse discovers them.

When there is no feverish Pulse, Vomit and Aloetic Pürges do well, and help the secretion.

These are good, Wormwood, or Tincture infus'd in Water, or Dock-roots boil'd, bitter Almonds boil'd in a Ptyfan; Friction helps the motion of Humours, and walking after the Medicines, Travelling, or Riding, tepid Baths, and Unction, with Oyl of Wormwood, Orris, bitter Almonds, the absterfion by Niter, and burnt Tartar helps the Itching; eat coarse Bread, the decoction of Cicers, to which add white Wine, use all the acids and salt and bitter Tasts in Diet.

During the Inflammation, purging is injurious, but that requires bleeding, and cool purging Salts, and *Merc. Dulcis*, bleeding of the *Hamorrhoids*. Take *Sena*  $\mathfrak{z}$ iss. *Rhubarb*  $\mathfrak{z}$ ijj. *Cich.* roots and Raisins each  $\mathfrak{z}$ ijj. infuse in Celandine-water and white Wine a  $\mathfrak{th}$ iss.

For the cold Constitutions we purge with Aloetics, *Tinct. Sacra.*  $\mathfrak{z}$ ij. and next Morning the purging Salt, or *Pil. ruff.* at Night, or  
resin

resin of Jalap, and *Merc. Dulcis*, or *extr. Ephraeticum* and Aloe.

Use the *Drymyphagia* Capers, Ash-key, Broom-buds, and *Nasturtium*-seeds pickled.

The alteratives in the hot Jaundice

1. The smoaky Bitters, juice of Dandelion, or the roots boil'd in Broths, Burdock Roots boil in Ale.

2. The dock Bitters, dock Ale, or Rhu-barb purges.

3. Diluting Medicines, steel-Waters, purging-Waters, Whey with the Cichoraceous Bitters, and mild Antiscorbutic Acrids.

4. Acids, pulp of Tamarinds, *Spir. Nitri dulcis*, acid spirit of *Sal. Armoniac*. Creme of Tartar  $\mathfrak{z}$ ij. *Sal. Tartari*  $\mathfrak{z}$ j Saffron  $\mathfrak{z}$ ss.

These are *Salso-Acids*.

Diagridium *gr.* iij. *Tart. Vitriol.*  $\mathfrak{z}$ ij. in Wormwood wine, or  $\mathfrak{z}$ j. of *Tart. Vitriol.* in Enulacampane Wine  $\mathfrak{z}$ ij. Oxymel with Hepatics, Oxymel Scylliticum with *Syr. de 5 Radicibus*, Niter in Broths, or Creme of Tartar and *Sal. Martis*, each *gr.* 6. in Broths.

5. The leguminous Bitter sweets. Powder of Fitches half a spoonful, Asparagus-roots in broth with Cicers, Broom-Ale, decoction of Cicers and Rosemary.

6. The slime must be supply'd by slimy Medicines to lubricate the passages in the viscid and tartarous Bile.

The



1. The Dung of Animals, which contain a Choler and slime. Take Goose-dung Mj. infuse it in Beer ℥ss. or Wine, all Night, strain it and add Mithridate ʒss. Saffron gr. 6. and Nutmeg, continue this 14 days.

Take Goose-dung ʒiv. Celandine & Madder-roots each ʒj. Cinn. ʒij. Saffron ʒss. infuse them in Wine ℥ij.

Steep Sheeps-dung in Snail-water, and strain it, give it with burnt Eggs-hells and Saffron.

Take Dock-roots ℥ss. Celandine and Madder-roots each ʒij. Agrimony Worm-wood, Horehound each Mij. Ash-bark and Barbary each Mij. Goose-dung ℥j. put these into four gallons of Ale.

A Dram of Castle-soap dissolv'd in Milk, and sweeten it, or dissolve it in Egg-caudle, or boil it in Posset-drink, or give it in Pills.

Boil Hemp-seed Mj. in a pint of Milk, sweeten, use it 9 Mornings, strain it, it purges and opens.

Boil Hemp-seed ʒiv. in Ale ℥iv. sweeten it, and give a quarter of a pint for divers Mornings, use several quarts of this for the Jaundice, as an approv'd Medicine.

Boil a Chicken, or a neck of Veal, with 12 Earth-worms wash'd, in a gallon of Water, add Hartshorn ʒj. Fennil, Cichory, and Parsly-roots each ʒj. Mace, Currans and white Bread, strain it.

In a Hæctic, from the Jaundice, Vomits, Purges, and purging-Waters, Steel-waters, but in great obstructions they will not pass, both tepid and cold Baths are proper.

7. The sweet Tasts which are laxative, are commended, as Figs, Raisins, but the Bitters agree best ; decoction of Grass-roots.

8. The Fern Bitter-sweets, as Polipody-roots, decoction of Dianthus, Ceterac.

For the pains with the Jaundice use *Oxy-crotum*, Cerat, Santaline, *Unguent Rosatum*, and Opiats inwardly, and no hot Fomentations and Oyntments ; mix Hepatics and Pectorals in Hæctical Cases, *Ammoniacum*, juice of Liquorice, flowers of Benjamin, Saffron, and Balsam of *Peru gr. ij.* A milky Diet, and the incrassating Medicines and Opium, are injurious ; change the Air, use Riding, and frequent Vomits.

The Jaundice from a Stone is incurable.

A Schirrus is known by a slow Fever, hardness, and bilious Urine.

If the Crisis by the Jaundice be perfect, the Fever ceases ; if imperfect, help it by purging and sweating.

A Bath of Mallows, as well as the fume of Vinegar, cures the yellow Colour. Wash with distill'd water of Pumpions.

*Sylvius* commends the decoction of Grass-roots, and *Spir. Nitri dulcis* for the Stone in the Gall, and we must try Soap-Pills,

L

with

with Rhubarb, Turmerick, and Saffron.

For the Hysterick Jaundice use Hysterics and Hepatics mixed.

For Poysons Vomit and Purge them off, correct the Acrimony by Acids, Oils, and Alexipharmics; give also Asses milk and Oil  $\text{ʒij}$ . twice in a day, and Milk Glysters and Oil.

These Tastes are most proper for the cold Jaundice.

In old Obstructions the Pulse is unequal in greatness and smalness, vehemence and weakness; and this Inequality requires the hotter Method, as well as the cold Jaundice.

1. The bitter Acrids of Wormwood, as Wormwood Wine or the Juice 2 ounces, or the Syrup long used in Beer, or take Conserve of Wormwood and Orange peels candy'd, each 1 ounce, *Specier Diacurcuma* and Steel prepared, each 3 drams, Saffron 1 scruple, with Syrup of Hore-hound, make an Elect.

Use Decoction of Chamomile flowers or *Abrotanum* in Wine.

2. Aloetics, as Elixir Proprietatis and Tincture of Steel mixed, each half an ounce, Dose 40 drops in Saffron Wine, or extract *Ecphractic*. and *aloe Salis Martis ammoniac*, each 1 dram, mix 'em with Elixir Proprietatis or *pil russi*, Steel, prepared Rhubarb, extr. *Gentian*, make Pills, Dose 4 at Night.

3. Steel

3. Steel Medicines being Fætid and Sulphureous: Take Conserve of Wormwood, Orange peels candy'd, each 1 ounce, Powder of Aron compound and Steel prepar'd, each half an ounce, Saffron 1 dram, Syrup of Citrons, or mix the Powder of Filings 1 scruple, in the Pap of an Apple every Morning: Or Turmerick, Steel powder, Rhubarb, Eggshells calcined, Zedoary, each 2 drams, Sugar 1 ounce and half, dose 1 dram in Wine.

4. The Lychnis Bitters; bitter Decoction or bitter Wines, or bitter Thea's of Centaury, Gentian, Buckbean.

Take Gentian 2 drams, Orange peels 2 drams, Horehound and Centaury each Mj. Saffron half a dram, infuse them in Wine ℥ij.

5. Madder Bitters, as juice of Celandine in syrup, or boil'd in small Beer and sweetened; give the juice of Aparine, 1 dram of Madder in Wine till 2 or three ounces are taken, or Celandine and Madder-roots each ʒj. Orange peels 2 drams, Sena 6 drams, infuse in Wine ℥ij.

6. The strong Lamium Bitters, as Marubium, Vervain, Tapsus roots in Wine, syrup of Horehound ʒvj. Oil of Tart. per deliq. ʒj.

7. The Bitter Gums, Gum Ammoniacum to 1 dram is given in an Oxymel.



Species Diacurcra, Steel, Myrrh, and Gum Ammoniacum each 2 drams, with extract of Gentian; make Pills.

8. The Laurel Bitters; an Emulsion of bitter Almonds, or Rataphia of Kernels, or mix them with Honey, Ash bark; or Ash keyes, or Olives and Walnuts pickled, boil Cherrytree leaves in Milk 1 handful, or make Thea of them.

9. Fix'd Salts, Gall-stones powdered, burnt Egg or Oystershells, ashes of Earth-worms in decoction of Wormwood, salt of Wormwood; Take Broom ashes 4 ounces, Saffron 1 dram, infuse in white Wine this is an effectual Medicine.

10. Volatil Salts and *Salso Acids*, as spirit of Blood and extract of Tincture from Saffron, or Curcuma, or gum Lacca, or Celandine roots, with spirit of Wine, and spirit of *Sal Armoniac*, drink Urine and Cow-piss.

11. Acrids, mustard Wine, or the Seeds swallowed, half a spoonful; boil Nettles in Ale, or *Erisimum* in *aq. Mulsæ*.

The sweet Acids, as roots of Smallage, Fennil, Parsly, roots of Sphondilium in Wine.

The bitterish aromatic Acrids, as Rosemary, Thyme, Calamint, *Sal Volatile Oleosum*.

12. The colouring Acrids, as Saffron, Turmeric, roast an Orange with Saffron 1 dram,

1 dram, infuse it in ℥ij. of white Wine, *Usque baugh* a Thea spoonful of Tincture of Saffron in Sage Thea.

13. Acrid Insects, as Millepedes 2 ounces, infus'd in Wine 2 pound.

The inward skin of Gizerns powder'd, which has the tast of Gall, take it in a Toast dipt in Wine; give Earthworms in Wine, with Myrrh or Cochineel; give powder of Earthworms burnt, to the quantity of a Bean, 3 days in Wine or Hony, with a decoction of Horehound.

14. The Terebinthinate Acrids, decoction of Eupatorium, or the decoction of Asarum roots in Wine, or Conyza 1 dram, in wine, or Savin in wine, or Enulacampagne roots in wine 3 ounces in ℥ij., Pine-tops in Ale; eat Pistachias; Mum is good in the Jaundice.

15. The Caustic Acrids, as *Pulv. Ari. comp.* an ounce and half, Conserve of Scurvy-grass 2 ounces, syrup of Limons 2 ounces, mix them; decoction of Acorus or Costus, Oxymel Scylliticum, juice of Anagallis, Opopanax 1 dram, in Pills, Garlick.

If the Liver be hard in the Jaundice, 'tis a fatal sign.

Those who have a Carus with the Jaundice, and a Singultus, are in great danger.

Bitter and Acrid Medicines long us'd, produce the Jaundice, as well as strong Drinks and Guaiacum Decoctions, and the same increase the stone.

The Jaundice happens about the 9th or 14th in Fevers, with good success, they follow burning Fevers, which end without abscess or sweats; they die about the 14th or recover, and there is a small Fever with them.

In burning Fevers, if the Jaundice and Hiccough happen on the 5th day 'tis fatal, for the Schirrus, which is known by a frequent hard Pulse, yellow Urine, and external Pain and Tumour.

The hard Pulse indicates the viscosity of the Lympha which is sily, if the Pulse be frequent, or pituitous if more slow.

Mercurial Purges best evacuate the size, and the cool method dilutes it.

The Aloetics and Gums help the secretion of the pituitous Lympha. Take *Massa Pil. Stomacum Gummi* Div. *Sal Chalibis*, *Tart. Vitriol* each gr. xv. *resin Jalap* gr. 24. *Elix. Prop.* q. s. *Pil.*

Frequent bleeding is necessary, and Steel Bitters, Volatil Salts, and the fixed and acrid Gums do help the obstruction, and outwardly the mucilaginous and discutient.

*Empl. de ranis quadruplicato merc.* 1 ounce, *Gum Ammoniacum* half an ounce, *Opium* dissolv'd in Vinegar half a dram, *Oil Philosophers*, q. s. *Ung. e succis Dialthea Martiatum* *Ung. de arthanita.*

## C H A P. XXI.

*The Pulse in the Scurvy is thus describ'd  
by Matth. Martinus, in his Treatise of  
the Scurvy.*

**P***ulsus exiguus, debelis, creber, formulam,  
subinde varians suam, quiq; reptare magis  
quam pulsare videtur, nisi febris vehementia ad  
magnitudinem eundem disponat, quiq; eadem de-  
fervescente in parvum, crebrum, vermiculan-  
tem & inaequalem extemplo commutatur.*

The Scurvy either depends upon the Salt *Cacochymia* alone, or that mix'd with the other hot or cold *Cacochymia*, and it produces its different Symptoms, as it affects different Glands or Parts: When it abounds in the Blood it oppresses its Motion, and causes it to move slowly, as appears by the creeping small Pulse and Faintness; the exceeding quantity of any other secretitious Humor oppresses the Circulation, as the Choler in the Jaundice, the salt Serum in the *Ischuria*, and the *Perspirabile* stopt in malignant Fevers.

The stagnation of the Blood and Serum produces scorbutick Lassitudes, straitness



of Breath, and scorbutick Spots in the Skin, and all the Tumors and Obstructions in the Mesentery.

The falso-acid *Serum* separates from the Blood for want of a vigorous Circulation, and passes thro' the Glands and causes itching in the Glands of the *Cutis*, Scurf, Tettars, Scabs, in the Mesentery Glands Pains, in the Glands of the Stomach Thirst, Vomiting, *Ructus*, *Diarrhaes*, *Cardialgias*; and these Symptoms are to be cur'd by a Milk-diet, but Styptics are injurious in such *Diarrhaes*.

In the Glands of the Mouth and Lungs it occasions Catarrhs, bleeding Gums, and Ulcers there; as it passes the Kidnies it gives sharp lixivial Urine, and in the Glands of the *Uterus* it causes a *fluor albus*.

The mixture of the salt *Serum* with the viscid *Serum*, produces the *Lumbago*, Rheumatisms, Inflammations, Apoplexies, Quinsies, Pleurisie.

The mixture of the salt *Serum* with the Cholera produces Cholera's, Jaundies, Erysipela's, *Deliria*, *Vigilia*.

The mixture of the salt *Serum* with putrid Humors produces Fevers, Gangrenes, Ulcers, *Fators* of the Breath, Sweat, Urine, Effervescencies, and burnings in the Night.

The Scurvy oft ends in Melancholy, and Obstructions of the Spleen and Sadness; it is therefore sometimes mix'd with the *Succus Melancholicus*.

Lan-

The falso-acid *Serum* passes the Glands of the Brain, and mixes with the Nervous Juice, and then produces weak Motion, Languor, Lethargy, Tremors, Stupors, Palpitations, weak Pulse, Convulsions, which are oft join'd with a Fever, and intermit with it scorbutic Pains in the Membranes, Vertigo, *Deliquia*,

The Scurvy belongs to certain Countries, by reason of the Sea-salt Air, hot Diet of strong Drinks, salt Diet, Sea-water, Sea-Fish, and Pork; or other putrid Meats, as Cheese: We observe, that they are most subject to the Scurvy, who eat Milk and raw Fruits, and live on a Phlegmatic Diet. By these Observations 'tis evident, that the scorbutic *Serum* is a hot Humor, bred from a hot Diet, by a frequent and quick Circulation.

All sweet things, as Honey and Sugar, ferment too much, and breed Wind in the Scorbuticks.

The Acrids and bitterish are the best Antiscorbuticks, because they help the Secretion of the salt *Serum*, and so do the watery Liquors, and dilute its saltness.

We know whether any Symptom belongs to the Scurvy, by observing the small unequal Pulse; so the scorbutic Pains and Fevers are known by comparing them with the Pulse, for many other Diseases have the same Symptoms, but want the scorbutic Pulse.

When the Pulse in the Scurvy is great and hard, the Blood runs too fast, and pro-  
bid

duces Fevers and Effervescences, with turbid lixivial Urine, Gout, Pain, Catarrhs, Dysenteries, or Diarrhæas, Erysipelas, Cholera's, Pains, Inflammations, Hæmorrhages.

The Scurvy is symptomatical when it succeeds Fevers, Pox, Rheumatisms, Gout, Quartans.

The Pulse directs us thus in the Cure of the Scurvy.

First, When the Pulse is great and hard, the cooling Anti-scorbutics are necessary; such are the cool Alteratives, and gentle Evacuations.

1. Frequent Bleeding and lenitive Purges by *Sal Catharticum*, *cremor tartari* and *merc. dulcis* in a *Bolus* at Night, before the Purge, or a cool Anti-scorbutic Diet-drink of *Sena*, Dock-roots, Rhubarb.

All strong Cathartics irritate the Pulse too much, and increase the Symptoms in the hot Scurvy, and occasion a greater Effervescence in the Humors; and for the same reason, violent Purges disagree with the scorbutic Dropsie and scorbutic Gout in the beginning, to keep the Body loose is very beneficial, but much Purging, where the Urine is red and Pulse quick and frequent, is very injurious.

The defect of *Serum* makes the Body bound, causes Atrophy or Phthisis; and these are to be cur'd by watery diluting Liquors; much stinking Sweat ends in an Atrophy for want of *Serum*. 2. The

Secondly, The cool altering Antiscorbuticks, are,

1. The watry Liquors which supply the defect of a thin Serum in the hot Scurvy, as Milk distill'd, Milk Antiscorbutick Wheys, Goats-milk, Milk and Water, and Wine and Water for Drink, distil Milk with Antiscorbutics for constant Drink, Goats-milk tbs. with two ounces of Brook-lime; the Spaw-waters and all the Chalibeats are very beneficial, and so are the Purging-waters, Decoction of the cooler Woods; abstain from fermented Liquors, Cheese, salt Meats, Pickles.

2. Styptics and Acids hinder the quick motion of the Blood and Pulse, and consequently the scorbutic Putrefaction thereby; such are the *Seda*, *Vermicularis*, *Nummularia*, *Bettabunga*, *Seteracach*, Pine-tops, Dock-roots, boil Sorrel and Brookelm in Posset-drink for scorbutic Fevers, or use the juice, *Rôb e. baccii*, *Sambuci* is an Acid; boil Scurvygrafs or Sorrel in skim Milk or Butter-milk, or make a Whey with Elder Vinegar, and boil Scurvy-grafs and Sorrel in it, use *crem. tart.* a Spoonful in Water in a Morning, or the old *Posca*, Verjuice or Juice of Limons and Water, Cyder for constant Drink with Water.

3. The mucilaginous Temper, the Acrimony of the salt Serum, as Emulsions, the Decoction of Snails and Milk, or of *Althaa* Roots and Milk, thin Broths, Infusions of  
Li-



Liquorish and Milk, Decoctions of Ivory, Meal-Meats, as Watergruel, Gum Tragacanth, the leguminous Tastes, as green Peas, juice of Fitches, Fumitory, Brome, Bier; these have a mucilage and crude Stypticity.

4. The cooler sub-Acrids, as Gill, Bier, Water-creffes distill'd in Milk, with Brooklime, or juice of Wood-sorrel, Water-creffes, Dandelion, Fumitory depurated and mixed with all Liquors, and cold Baths are very useful in hot Scurvies.

When the Pulse changes from great to small, the method of Cure must alter also to a warmer temper in the cold Scurvy; but when the Pulse has an inequality betwixt both, the Method and Medicines must be mix'd; when the Scurvy is symptomatic, we mix Antiscorbutics with the specific Tastes against the original Disease.

2. When the Pulse is weak, and small, and unequal, it requires the hot Antiscorbutics to raise the Pulse and evacuate the Serum.

1. The strong Cress Acrids, to ℥j. of Wine add ℥iv. of juices of Scurvy-grass, and syrup of Limons ℥ij. or Rocket-seeds ℥ij. Scurvy-grass M. iv. Ginger ℥ij. infus'd cold in White-wine ℥ij. or Horse-radish-Roots ℥ij. Scurvy-grass Mij. Cortex, Winterams ℥ij. in Wine ℥ij. or a distill'd Antiscorbutic, Water of Scurvy-grass, Cardamine, Water-creffes, and to ℥ij. add *aq. raph. comp* ℥iv. *sy. schelytyrbicum* ℥ij.

2. The

2. The bitter Acrids, Wormwood-wine, and Juniper-berries, or boil Wormwood and Juniper-berries *ana* Mij. in  $\text{℥iv}$ . of Milk

3. Volatile and fix'd Salts, or the corrosive Acrids, decoct. of *Chelidonium minor*, Mustard-wine  $\text{℥ss}$ . whole, in  $\text{℥ij}$ . of Wine, Squills, Garlick, Rue, Aron.

4. Turpentine Plants, as Pine Ale, Gilead Balsam, Juniper-berries.

5. The Acrid Aromatics, Winter Bark, Orange-pills, Ginger.

6. Strong nauseous Bitters, as Gentian with Steel.

The small weak Pulse will admit of bleeding little, and only lenient Purges, bleeding by Leeches, or cupping is most convenient, hot Baths, with Friction and dry Sweating, help the Secretion of the salt Serum, and the acrid Woods, as Guaicum, and dry Sweating in the Hummums.

## CHAP. XXII.

*The Pulse in the Fits of the Gout, is quick, frequent, and great.*

**T**HE matter of the Gout is a *Salso-Acid Serum* which is apt to coagulate into Chalk Stones, and this is drove into the Glands of the Joints by an Effervescence in the Blood.

*Hippocrates* observ'd that the Gout had a Fever join'd with it, and that the Blood was corrupted in the Gout by *Pituita* (that is fizy Serum) and Bile, or hot *Cacochymia* of acrid and salt Humours.

On this Fever the defluxion of Humours thro' the mucous Glands of the Joints does depend, which swells, inflames, and compresses the Membranes about the Joints, and causes great Pain, Heat, high colour'd Water, want of Sleep, Thirst, Nauseousness, Lassitude. The Fever preceeds the Gout-Pain a day or two, the Fever and Pains worst towards Night, and better in the Morning; the Water is usually pale in the beginning of all serous Defluxions; the Gout generally begins in *February*, and the Vigour and Horror shew the Gout-Fever.

This

This joint-Fever happens Spring and Fall, and usually lasts 6 weeks before the salt Serum is naturally evacuated by Urine and Sweat.

Whatsoever excites an Effervescence by accelerating the Pulse, produces the defluxion in the weakned Membranes, such is Intemperance, changes of the Year, and Weather, Passions, suppression of Evacuations by *Menses*, Piles, Sweat, or Urine, hot Baths, much Exercise.

The Pulse is great, frequent, and quick, during the Effervescence and Pain, and this Pulse indicates the Bleeding and Evacuations, cool Diet, Abstinence, and Opiates, which are usually prescrib'd in *Ephemera's*, and Abstinence from fermented Liquors especially.

Bleed in the beginning of the Fit in young Men, and repeat it, and sparingly, in old Men; the Serum appears sizy and bilious in the Gout.

We must not purge during the Effervescence for 14 days, but give Glysters, leave all Flesh and fermented Liquors, and use a thin cooling Diet, such are Broths, Sack-whey and juice of Limons, Wood-drinks, Gruels, Barks, Broths; these dilute the salt Humours, and in the beginning the Gout must be treated as a Fever, with inflammation for 14 days or 3 weeks, for all hot things are injurious.

When



When the greatness, celerity and frequency of the Pulse abates, we may purge with Rhubarb, or Sennates; and in Hydropic Persons with *Caryocostinum*.

Opiates may be given for extream pain, and ʒj. of *Opium*, put into a Pultis of white Bread and Milk, with Saffron ʒss.

As the Effervescence and Pain in 3 weeks go off, then Diaphoretics may be us'd, such are spirit of Hartshorn, Diascordium, *Goa Stone*; sweating in a Room made for that use is most beneficial, at last for the *Peripneumonia* in the Gout; repeat Bleeding and Blisters, Glysters, use Diaphoretics, and Pectorals; apply Herrings to the Feet.

For a *Diarrhaea* give Diaphoretics, and *Laudanum* Morning and Night, after a Rhubarb Purge.

For the Gout in the Stomach, Bleeding, Vomiting, Blisters, strong Wine, Diaphoretics, *Elixir Salutis*, an *Emplaster* outwards, Fomentation, and Bath; to the Feet, Glysters, Opiates.

Take roots of *Serpentaria*, *Contrayerva*, *Pulv. chel. compiacan* ʒj. salt of Wormwood and *Cochinel* each ʒss. dose ʒss.

In the Cure of the Gout-Pains we must consider the natural Temperament, whether *Pituita*, *Bilious*, *Melancholic*, and to those *Cachochymia* we must adapt the Topics as well as to the *Salso-Acid* Humour, and for extremity of Pains we must use the Acids and Mu-

Mucilaginous and Narcotics, and after the Effervescence is over, and the Pulse remits, we must use Discutients ; such are the Bitters, the Acrids, Salt, Mercurials and Fœtids, and at last, to strengthen the Parts, Stypticks and Cold Baths.

1. The Acid Topics, foment with three parts of Water and one of Vinegar, or with Phlegm of Vitriol, Oil of Roses and Vinegar.

The pap of Apples in a Pultefs, or with Oil of Frogs ; boil Mallows in Oxycrate, and add Bran. Or mucilage of Quinces mixt with Vinegar, warm Water ℥ss. spirit of Salt ʒss. Palm Ointment and Rose Vinegar ; mix Alom, Barm, and the yolk of an Egg.

2. The mucilaginous Topics ; liquor of Snails and Salt, Snails or Worms pounded, with Hony ℥ss. *aq. Spermata ranarum* apply'd hot, and *Sacch. Saturni* and spirit of Wine added to it. Boil the bark of Elm and apply it with Salt and Water, Comphry roots pounded and apply'd, add Linseed, Poppy seed, and Althea roots to a Pultefs of white Bread and Saffron, Althea leaves, Cow-dung and Goose-greese ; apply the cuttings of Gourds.

Take Milk ʒiij. Oil of Roses, the white of two Eggs, Cow-dung, Vinegar, each ʒij. Saffron ʒj. Opium ʒij.

M

Mix

Mix the white of two Eggs with Salt and Vinegar.

Oyl of Frogs and Elder Vinegar, boil Goats-dung with Vinegar, Cummin seeds, Chamomoil flowers and Saffron.

Take Cow-dung ℥j. Bean meal ℥iij. Cummin seeds and Fenugreek each ʒj. boil in Oxymel.

3. The Narcotics are *Theriaca Andromachi*, Opium, Tincture of Saffron in spirit of Wine ʒiv. Camphir ʒj. Opium ʒj. anoint the Parts pain'd with it. Henbane-leaves boil'd in Milk, *Empl. Diacalcitheos* with Saffron and Opium, *aq. solani sperm. ran. Sacch. Saturni* 1 dram.

The Discutients are,

1. Salt Tasts, foment with Sea-water or Brine, putrid Urine distill'd.

A Lixivium and Wine.

Take Lime and quench it in Wine or Vinegar. Take Soap ʒiss. dissolve it in spirit of Wine and Elder flower water each 2 ounces.

Take salt Urine, Wood-ashes and Vinegar, boil them to foment; spirit of *Sal Armoniac*, spirit of Wine, Camphir, mix and anoint.

Take

Take Sage, Rosemary, and Mugwort each 3 handfuls, Salt ℥ij. *Sal Armoniac* ʒij. Bran ℔ss. boil them in two gallons of Water, add Brandy ℥ij. for a Lotion for the Feet.

Niter mixt with Oil discusses, salt of Tartar and *Sal Armoniac* each ʒij. dissolved in warm Water ℔iv. use it warm with a Cloth.

Snow water ℔j. *Sal Armoniac* ʒj. a Cataplasm of Salt and Soot, with the white of Eggs.

2. Bitters, Aloes dissolv'd in Vinegar and anointed; anoint with the Gall of a Weather and Suet.

3. Acrids, Aron roots powder'd, and Cow-dung, Turneps apply'd as a Pultess, or in a Fomentation, powder of Hermodactyls, Barly meal and the white of Eggs.

4. Foetids, Oyntment of Elder, bath of Worms, and Foxes, *Bals. Sulph. succinat. Empl. Diasulph.* or *ex Cicuta cum Ammoniaco*, *Bals. Sulph. cum Ol lini*, Oil of Worms, Frogs, or Foxes.

5. *Mercurials empl. de ranis cum Mercurio.*

The Styptick to strengthen the part subject to defluxions must be us'd, after all Evacuations to strengthen the Tone of the mucous Glands and relaxed Fibres.

Take white and green Vitriol each ʒj. Camphir ʒij. *aq. Vita* and white Wine each



each ℥ij. apply it with Cloths, *Empl. diaphanum*, or *Deminio* and *Paracelsis*.

Take white Wine ℥ij. Vinegar and spirit of Wine each 3 ounces, Myrrh ʒij. Alom, Opium each ʒj. green and white Vitriol and Niter each half an ounce, mix and foment.

Smith's water ℥viii. Oak bark 4 ounces, Salt 2 ounces, Alom ℥ss. boil for a Pediluvium; 'tis proper after Evacuations at the end of Fits, green Moss boil'd in Urine or Ale.

Wash with a decoction of Bones calcined, Salt, Alom, Oak bark, and Cephalics, Sage, Rosemary, Lavender for the *Tophi Caustics*, and *Mercurials* and Mucilages, bath of Ants, decoction of Guaiacum, *Mercurius Dulcis*, Cinnaber with the Soap Plaister, Aron roots and Cow-dung.

Pound Briony roots, *Aqua Vita*, *Ol. Scorpions*, or Human Bones *Empl. ex Ammoniaco* or *Galbanum*, Hellebor boil'd in Oil of Peter; mix Squills, Cyclamen Dragon, or Orris, Anemone, or wild Cucumber roots, with the mucilaginous, as *Lilly's Narcissus Alibea* Briony, and some Exungias in a Pultifs.

Some apply *Ranunculus flammeus* to blister the Part, or a Blistering Plaister.

Anoint the Tophi with Balsam of Sulphur or Oil of Peter.

Purges are dangerous in the beginning of the Fits, as in all other Inflammations, but  
Purges,

Purges, Diaphoretics, Diuretics, are proper after three weeks, when the viscid Serum is digested and made fit for its natural Secretion by Sweat, Urine, and Stools. The Topics are to be avoided till after Evacuations, avoid the Unctuous, and use Waters, Pultisses, Plaisters.

A great use of Opiates disposes to the Palsie.

All hot Baths injure the Arthritic, but the cold long us'd strengthen the Limbs, and the Aluminous, Nitrous, Chalybeat, and Salt-water, are the best cold Baths for the Gouty.

The Intentions for preventing the Gout.

1. To prevent the quick and frequent Pulse, which produces the defluxion and fits of Pain with the other Symptoms, and the same cool Regimen which cures the frequent Pulse, will prevent it.

2. The preservation from the Gout require the Cure of the Salt Cacochymia, and frequent Pulse, which produces the Scurvy, to which Gouty Men are subject.

'Tis observ'd that all high Diet, and strong Drinks offend the Gouty, and great Exercise, Passions, extream Heat, or Cold, and suppression of the Evacuations of the salt Serum by Urine and Stool; but water-drinking, a cool moderate Diet, with moderate Exercise preserves from the Gout.

The Old Writers imagined that the Gouty Humour was Cold, and wanted Digestives, which occasioned the use of too many hot Medicines to preserve from the Gout, and some Moderns suppose it an Acid Humour, for which they prescribe too many testacious Medicines, and Salts; but the immediate Cause is a salt Humour, such as is in the Scurvy, which is produced at first by an exceeding quick Pulse, great and frequent, which is usually the immediate Cause of the salt Cacochymia, but in time that degenerates into the weak, small, frequent, Scorbutic Pulse. *Sydenham* supposes the Gouty Humour to be from Indigestion, but this is only the effects of the Gouty Humour, and he confesses it a nidorous Crudity, which all Physicians will say is an over Digestion, and is to be cured and prevented by cool Medicines, and not by hot Electuaries, of Acrids and Aromatics and Bitters; and he acknowledges that Wine and all fermented Liquors are injurious to the Gouty, which is a clear Proof that 'tis not an Indigestion, which is best promoted by such Liquors.

In Old Men and ferous Constitutions the Pulse and the Pains are less, in the Sanguinous, the Pulse and Inflammation are great, and in the hotter Constitutions the Bilious and Salt; the Pains are most vehement, in the Melancholy the Pains are corroding with coldness. All

All things which produce a frequent Pulse, as Surfeits, Venery, immoderate Labour, Retention of Excretions, hot vinose Diet, produce the Fits of the Gout, and must be avoided.

The old distinction of the Sanguinous, Bilious, Serum, *Atrabilurian* Gout, is from the Gout in different Constitutions and is useful.

The Flux both thro' the Nerves and Arteries, concur to the producing the Pain, whereby the Membranes are distended and inflated, and Pain stops the Circulation thro' the Part, and occasions the Inflammations.

The Indications in the preventing the Fits into quick and frequent Pulse, prevent the Effervescence of Humours, and the defluxion, and to temper the Salt Cachochymia.

1. Against these inconveniencies we must Bleed, Vomit and Purge two or three times in a Year, open the Hæmorrhoids, and procure the *Menses*.

We evacuate the bilious Serum, by chewing Rhubarb three Days before and after the changes of the Moon.

For the Hydropic we give strong Purges of *Caryocostinum* ʒvj. *pulv.* *Hermodaetyl comp.* ʒij. *Pulv. Cornachim* half a dram, or Calomel and resin of Jalap each ʒss. *ext. rudii, Pil. Stomach.* each ʒj. Tops of Elder Mj. or the  
M 4 roots



roots of dwarf Elder ʒj. in white Wine  
1 pound.

Use Thea of Elder-leaves, and add spirit of Scurvy-grass. *Note*, That Bleeding, Purg-  
ing, Sweating, give Gouty Fits, unless *Lau-*  
*danum* be given after, use Purges before the  
Equinoctials; the decoction of the Wood  
is proper for constant drinks, but all Diu-  
retics of Millepedes and Salt are too hot.

The frequent use of Dioscordium or  
Venice Treacle is too hot, an Antiscorbu-  
tic Diet-drink of Dock roots, Gill, Water-  
cresses, Pine tops, Daucus seeds, is a most  
proper Diuretic.

The Gout when 'tis an Original Disease,  
is to be cur'd as the salt Cacochymia; when  
it succeeds other Diseases the morbid Ca-  
cochymia is mixt with the Podagric saltiness;  
when the Gout succeeds the bilious Cholic,  
the bilious and salt Cacochymia's are mixt;  
when it succeeds a Rheumatism, the viscid  
and salt are mixed; when it succeed Fevers,  
the fermentative and salt are mixed; when  
the *Asthma Chlorosis Dropsie*, the Serous and  
Pituitous are mixed with the saltiness; when  
it succeeds Melancholy, or Hysteric Fits,  
the windiness and saltiness are mixt; these  
Gouts in the Fit require the common me-  
thod.

But for prevention, the respect must be  
had to the Original Disease and its Caco-  
chymia.

2. The

2. The saltness and fervor of the Blood must be corrected.

1. By watry Liquors, Asses milk, Bath waters, or Steel waters, Wood drink, Whey, distill'd Milk, Thea's oft us'd.

2. By Acids, *Crema of Tartar* in Water, Cyder, Oxymels, juice of Limons and Water, syrup of Verjuice, Prunes, Barberries, Wood-forrel with Antiscorbutick waters.

3. By the bitterish Juices of Dandelion, brook-Lime, Water-cresses, Dock roots, Broom, Pine, Ceterach, Fumitory.

Moderate drying, and Styptic Medicines strengthen the Gouty Limbs, and hinder the Flux on them.

The bitter, acrid, salt, and nitrous Tastes discuss, and so does Friction and Baths the relicks of the Disease.

The Diet of the Gouty must be directed against the bilious, viscid, salt, Serum; drink no fermented Liquors; use infusions of Liquorish; quench Gold or Steel in water mixt with wine; abate a third part of Meats and Drinks, broths of Snails, Crayfish, live much on Fish; the Water-drinkers are rarely Podagricks; use Cold Baths frequently, keep the body constantly open.

In old Gouts, Steel and Bitters preserve the Circulation, and help the secretion of the Gouty Humour, the Nervines and Antiscorbutics open the Glands, and Nerves; avoid Surfeits, Drunkenness, and violent  
Motions,

Motions, and sedentary Life, and much Venery, which occasions defluxions.

The greatest Specifick against all defluxions from Effervescences, is Water-drinking.

Avoid all flatulent and fermenting Diet, as Garlick, Onions, Cheese, Beans, new Drinks, viscid Meats.

In the Summer bath the Feet in Sea-water, in the Winter with Salt and Water warm'd; rub the Feet with a Sponge, or with burnt Salt and Oil.

In the Cachectic, make a drink with Burdock-roots, Chamedrys, ground Pine, and take it with Steel Drops.

The dangerous Symptoms in the Gout are Epidemical Fever, Delirium, excessive Pains, and inflammation of the Lungs, Apoplexies, Convulsions, Dyspnea, Vomiting, Gripes, cold Sweats, Fainting, a small or intermitting Pulse.

Every Fit of the Gout throws off a great quantity of Salso Acid Serum in the Limbs, and Nerves: In old Men we help the Effervescence by Bitters and Steel, for their Fits are chiefly Nauseousness, Gripes, Looseness, without much Pain.

No acrid Medicine, nor Volatil Salt is convenient till the declination, when the Serum is digested, and Fits, for Perspiration.

Catarrhs, the Pox, Pains of the Stomach, intermitting Fevers, Gripes, oft end in the

the Gout, as well as the obstructions of the *Menses* and Piles.

Strong Purges or Vomits do not agree with thin hot Tempers, but are suitable to the Hydropic.

Unless we prevent the Effervescence as well as temper the salt Humour, we cannot prevent the returns of the Gout.

When the Gout is old, and the Tophi bred, the Urine is pale, which is a sign of a Cachectic state, but during fourteen Days in the common young Gout, the Urine is turbid and Feverish.

Many and long Fits of the Gout make the blood sily, which requires frequent bleeding.

If the Gouty Serum is not expelled into the Limbs every Year, it produces Asthma, Apoplexy, Palsie, Lethargy, Cholic, Convulsion, Nauseousness, Vomiting, Fainting, Giddiness, and they oft become Hydropic.

Hippocrates's Notion stands true, *πῦρ καὶ ὀδὴν λαμβάνει πρὸς ἀπρῆα*. For which he gave Glysters, apply'd cold things, prescrib'd cold drinks, and burnt the place above the Joint with raw flax; he commends Asses milk and boil'd Whey, and this method is proper for the frequent Pulse and salt Cachochymia

When the Pulse is languid and unequal before the Gout, we must help the Effervescence



vescence by Diaphoretics, to expel the salt Serum on the Joints.

The more frequent the Pulse of the Arthritic, the nearer they are to their Fits, and require the avoiding all Causes which accelerate the Pulses, and evacuate the Humours which irritate it, which is the salt Cacochymia.

'Twas a prudent Caution of the old Writers to apply repellents to the Gouty Part, when they purg'd them; 'tis necessary for the Gouty to use the *Hummums* in the declination for a more full Evacuation of the salt Serum, Pills of Rhubarb and *Aloes rosate*, often taken, prevent the Fits, and the use of a decoction of Guaiacum or the Woods; to evacuate by Sweat for six weeks, but a cool Diet; Water-drinking is most commended by *Crato* in his *Concidia*.

---

## C H A P. XXIII.

*The Pulse in the Phrenzy is small, hard, very quick and frequent, and convulsive.*

**I**N this Disease the Oppression of the Brain makes the Pulse small and convulsive, the Inflammation renders it hard, and the Fever quick and frequent.

This Disease depends on a great rarefaction of bilious Blood and acrid Spirits, and indicates the condensation of them.

The *Delirium*, the *Vigilia* are Signs of rarified Spirits, as well as their violent Actions, Restlessness, Convulsions, the great heat of the Body, redness of Face, Pain in the Head, burning Fever.

The Pulse is oppress'd by Blood in the Head, and the Respiration is great and rare, and they perceive no Thirst.

The Causes of this Disease produce Rarefaction of Humors, as Anger, bilious Temper, Youth, Passions, external Heat, Surfeits, Contusions, Wounds of the Head, the Translation of a Fever to the Head, or other Inflammations, as in the Quinzy, Pleurisie, to which the Phrenzy succeeds.

The rarefaction of Spirits, the Inflammation and oppression of the Brain, efferves-  
cence

cence of Humors, are all cur'd by the cooling Method, bleeding, purging, vomiting, and cool Alteratives.

The Revulsives help the motion of the stagnating Blood, bleeding in the Neck, Cupping, Blisters, and all Evacuations.

The Artery seems to tremble, and to be cut off by a Convulsion, to be lift up with a Vibration, and to be contracted.

The immoderate Crebrity of the Pulse is a sign of a *Syncope*.

A hot Disease with a small Pulse has always a greater Crebrity; 'tis rarely undous, because the Pulse wants softness.

The trembling of the Pulse is a sign of weakness, or of Convulsion.

The cool Alteratives.

1. Acids, spir. of Nitre 40 drops in 24 Hours, or spir. of Vitriol 20 drops in two pound of small Beer, drink acid syr. of Currans, or Barberries, with Water, or Oil of Vitriol, in which *crem. tart.* is dissolv'd give Glysters of Oxycrate.

2. Styptics, Acerbs, *Sedum majus*, *nymphaea*, *anagallis*, boil two handfuls of either in Posset-drink.

3. Tinct. of Roses, Tinct. of Coral, *saccharum saturni*, *salperlarum*, apply the Styptic boil'd in Oxycrate to the Forehead, syr. of Purslain inwardly.

4. By the watery and nitrous Medicines, and the mucilaginous Whey, with the Leaves  
of

of *Ulmaria* and *Pimpinella*, Burrage, or white *Nymphaea* Flowers, Milk-water, Emulsions with Nitre.

Take Burrage, Wood-sorrel of each two handfuls, two Pipins slic'd, the Pulp of an Orange, Sugar two ounces, *Sal prunella* two ounces, pound these and pour on them two pound of Water.

5. Narcotics, *Laud.* gr j. every 8th hour till 10 grains are us'd; apply Poppies and Lettuce externally.

Bath the Temples with the decoction of Henbane.

Take *ung. populeum*, Oil of Nutmeg express'd of each half an ounce, Opium, Camphire of each half a scruple, mix them to anoint the Temples.

Apply *solanum hortense* bruised with the Berries to the Forehead, or the Juice; bath the Feet.

In malignant Fevers we mix Bezoardics and Narcotics.

Take Cinnab of Antimony or Bezoardic Min. one scruple, *laudanum*, Opiat and Camphir of each one grain.

Take *Sal prunell.* one scruple, Camphir gr. 3, give it in a decoction of *Anagallis*.

In intermitting Fevers use the *Cortex* to stop it.

For the smalness and faintness of the Pulse use the Aromatics and odoriferous Cordials and Wine.

Wash



Wash the Feet in warm Water, and use a tepid Bath at last.

6. Externally Epithemes must be us'd,

1. Of the mucilaginous and cold things and Styptics; Frogs-spawn-water half a pound, Opium dissolv'd in Vinegar 3ss. Camphir and Saffron of each half a scruple.

Apply Housleek bruise'd, or the slices of Gourds to the Head shav'd with Milk, or to the Feet with Vinegar, or Oxycrate to the Stones.

2. Narcotic Epithemes; Lettice-water two ounces, Vinegar half an ounce, Opium one scruple, Camphir 6 gr.

3. Resolving hot Epithemes at last; a live Pigeon, Chamomile and Elder-flowers, Melilot and Marjoram in a Fetus, Mustard-seed, Castor, Embrocate with warm Water or Milk, Leeches behind the Ears, a Cupping-glass to the Head.

Abstain from Wine, all Bitters and Acrids and the odoriferous, such as Wormwood, Myrrh, Saffron, Thus, Styrax, *Agnus Castus*, which by their Heat and vaporous Spirits quicken the Pulse, and produce Madness.

Purges and Vomits are good in a *Paraphrenitis*, from strong Liquors, Milk Acids, and Emulsions do most good inwardly.

Bleeding in the Foot, and Emulsions and Diluters must be us'd for the Inflammation, and

and purges at the end, but they are injurious before, but we may purge gently in the beginning, and use Glysters.

*Baglivius* advises to avoid Blisters, but *Bartolet* advises to use Blisters after the State, and Cupping-glasses, but not in the beginning.

Errhines help away the suppurated Matter at last.

*Bartolet* gives his *Pharmacum Phantasticum* after the state; pound Poppy-heads, Num. 8. with the Seeds, with the Flowers of *nymphaea*, moistned with Rose-water, and apply them to the Forehead.

A Lethargy, Convulsions, or Suppuration, often succeeds the Inflammation in a *Phrenitis*.

Bleed in the Arms, Neck, Feet, to remove the oppression on the Pulse and Blood-vessels, and then use Diaphoretics.

In Melancholic Cases, and the *Phrenitis*, the Distemper ends well by the Hæmorrhoids.

Deep Sleep after Watching and *Delirium* are good signs in Fevers, if they be eased thereby.

They who are deaf in Fevers are mad, unless that deafness cures the Disease by bleeding at Nose, or bilious Stools, or Pains of the Limbs.

The Pulse in the *Vigilia* in the beginning is great, quick and frequent, but as the Spirits are spent the Pulse is small, weak and flow.

Watching depends on rarified Spirits, and is attended with an *Ephemera* and Restlessness from them.

The Signs of the rarified Blood are cholerick colour'd Water, burning in the Flesh.

The Causes which irritate the Blood and Spirits, and agitate them, are, Pains, Cough, Thoughtfulness, Anxiety, Study, Fasting, acrid Diet, Cares, a volatile Temper of Spirits, Fevers, Poisons; all these irritate the Circulation and expand the Spirits.

1. The great, quick and frequent Circulation and Pulse must be cur'd as in *Ephemeras*, by Evacuations, Bleeding, Sweating, Purging, or Glysters, or the tepid Baths.

2. The Nervous *Lympha* must be diluted and cooled by watry Liquors, Emulsions, with *Sal Prunellam*, Barley-water, and Acids.

3. The small and weak Pulse indicates Cordials to supply the Spirits, as *spec. Diambræ*.

Dry Bodies are most subject to Watching, moist Air and moist Meats help Sleep,  
put

put on a Shirt dipp'd in cold Water, scratch the Head, hearken to Musick, or the fall of Waters, use a Nodulus of Opiates, as Opium, Styrax, Saffron.

4. Narcotics compose the Agitation of the Animal Spirits, and so much must be given as will compose them at repeated Doses.

5. In Melancholick Fancies the Pulse runs under seventy in a Minute, and their Watching requires Steel to promote the Circulation, stop'd by grumous Blood, their Fears stop the motion of the Heart, by a Constriction, and that occasions grumous Blood, and pale Water, and Chilness.



## C H A P. XXIV..

*The Pulse in the stoppage of Perspiration is quick, frequent, and great, as in all Effervescences and Defluxions.*

**T**HE Feverish Pulse indicates Bleeding, and cool-Methods for opening the obstructions of the Pores which produc'd it ; it indicates sweating.

The Perspirabile retained, excites the Pulse to a frequency, and that produces Pains, Coughs, Fluxes by Urine, Heat, and the Effervescency in our Humours.

1. The cure of the Effervescence, is by Bleeding, Glysters, Purging gently, Opiates and cool Diet.

2. The cure of the obstruction of the Pores is

1. By promoting Sweat by these Tastes.

1. Volatil Salts, as spirit of *Sal Armoniac* 30 or 40 drops in warm Ale at Night. Take Poppy water  $\mathfrak{z}\mathfrak{v}\mathfrak{j}$ . Treacle water 2 ounces, Volatil Salt of Hartshorn  $\mathfrak{z}\mathfrak{i}\mathfrak{s}$ . Sugar 2 drams, mix them for 3 draughts.

2. The bitter Acrids, as decoction of Guaiacum, Ash, or Box, Venice Treacle 1 dram.

3. Acrid

3. Acrid Plants, as *Serpentaria*, *Contrayerva*, *Ginger*, of each 3fs.

4. The acrid Bitters, as *Scordium*, *Germander*, *Woodfage*, *Hops*, *Motherwort*.

5. The acrid smoaky Bitters, as *Carduus* in *Poffet drink*, or an *Emulfion* of *Carduus* and *Turnep-seeds* each 3ifs. with *Carduus* water.

6. The acrid Turpentine, *Juniper wood* and berries, *Conyza*, *Petasitis*, *Asari*, *Carlina*, *Serpentaria*.

7. The acrid Aromatick, *Sage*, *Rosemary*, *Pulegium*, *Betony*.

8. The sweet Acrids, *Imperatoria*, *Angelica*.

9. The Wormwood Bitters, flowers of *Chamomail*, *Millefolium*.

10. The *Lychnis* sub-Acrids and Bitters, *Soapwort*, *Centaury*.

11. Plants of a strong Odor, as *Saffron*, *Camphir*, *Lapis Goe*, and *Pulv. e chel. comp.* has their Virtue from *Camphir* and *Perfumes*, *Marygold* flowers.

12. Bitter Gums, as *Myrrh*, *Gum Guaiacum*, *Camphir*.

13. The Sulphurs of Minerals, as *Cinabar* of *Antimony*, *Antim. Diaphoreticum*, *Benzoardicum Minerale*.

14. The Fœtid Parts of Animals, *Horse dung*, powder of *Vipers*, ashes of *Toads*, *Cochinele*.

15. The Acid Acrids, as Treacle water and Bezoardiac, Vinegars, *extr.* of *Anagallis*, *flore Phaniceo*, *rosa solis*, spirit of Guaiacum.

16. Opiats mixt with Diaphoretics, Diascordium, Theriaca, Mithridate 1 dram.

17. Externally, Baths, Fumés, Oynments, Fomentations, Frictions, Plaisters, Issues, Flannel, Exercise.

Put a Viper or two to 1 pound of Broth or Wine.

Boil any of these in Posset drink, *Anagallis*, *Carduus*, Agrimony, Scordium, Marygold or Chamomile flowers, Meadow-sweet, or roots of Butterbun, or Burdoc, of each a handful, make a Posset drink with two spoonfuls of Treacle, Vinegar and Milk.

Take *Carduus* water ʒij. Treacle water and syrup of Citrons each ʒss. Diascordium 1 dram.

Boil Guaiacum ʒvj. Liqueurish ʒij. boil all in 12 pound of Water to half; take a Draught Morning and Night, warm and aromatise it with Cinnamon. So boil Box, Ash, or Juniperwood, or Rosemary.

*Alpinus* advises Illinitius, with Oils of Rue or bitter Almonds, or Chamomile, or Juniper, mixing red Niter with it; by this, after friction much sweat is produc'd in Fevers, especially in the Pestilential and this.

The *Egyptians* use in the Small Pox, and to Children, and in other malignant Spots, to help them thro' the Skin. Some

Some anoint the Spine with oil of Rue, spirit of Rosemary and Treacle mixt, before the cold Fit of Agues, and give Venice Treacle inwardly.

We must avoid all things cold, and the viscid, watry, styptic Diet, the change of Cloths, sitting in a cold place after Exercise, put off no Winter Cloaths till the middle of *May*, nor wear the Summer longer than the middle of *August*. Exercise helps Perspiration, hot Baths and Friction do the same; and the acrid oils of Dill, Pyrethrum, Horse radish, relax and open the Pores, Fires, hot Air, warm Beds, bottles of hot Water apply'd, and all hot Thea's and warm Drink promote Perspiration, and burnt Wines and strong Waters.

Whatsoever rarifies the Humours helps Perspiration, by accelerating the Pulse and Circulation.

Opiates, Sleep, Rest, Emollient Meats and Baths tepid, Pleasure, and moist Weather, relax the solid Parts.

Waking, Pain, Motion, strong Passions, contract the fibrous Parts, and so do cold Baths, Acids, Fear, Terror.

Opiates stop unnatural Fluxes by stopping the Pulse and Effervescences, but they promote Sweat, Urine, and *Menses*, by curing the Pain, and contractions of the Vessels, or disorderly motions of the Spirits.



## C H A P. XXV.

*In the suppression of the Menstrua the Pulse is quicker, more frequent and small.*

**T**H E quantity of the *Menstrua* retain'd oppresses the Spirits and Blood Vessels, and the putrification of them excites the feverish Pulse; the remote cause of these Pulses is the retention of the *Menstrua*, the immediate is the rarification of the Humor, and the oppression of the Spirits and Blood.

The chief Symptoms depend on these Pulses, the Fevers drives the *Menstrua* suppress'd into the Stomach, and causes a Nausea therè, and Vomiting Phlegm; on the Muscles of the Breast it produces Stitches and Pains, and the *Dyspnea*; some Pains are in the Loins, Inguina and Belly, which grows hard and full; in the Feet dropical Tumors, Gout, and Abscesses; the Thighs and Belly swell, of which they usually die: In the Nerves the Humor suppressed produces Hysteric Fits, Convulsions, Pains in the Loins, Watching, anxiety of Mind, Fainting.

The

The causes of the obstruction alter the Spirits and Blood, such are

1. External Cold catch'd on the Feet in the time of *Menses*, or drinking cold Water; this thickens the Humour.

2. Acids or Mucilaginous Diet check the natural Effervescence of Humours, as eating Oatmeal, &c.

3. Terror, Sadness, Fear, contracts the Vessels, and stop the Pulse and Flux.

4. The Blood may be evacuated other-ways, as by Hæmorrhages, Hæmorrhoids, Vomiting, Loosness, Consumption, *Fluxus Albus*.

5. The Blood is too serous in the Cachectic and Green Sickness, it is too viscid in Rheumatisms, 'tis of too great quantity in Plethorics, or defective in tabids; the preternatural Quality, Quantity, Consistence, Motion, and mixture of Humours, deprave the natural Fluxes, as well as all Disorders of the Animal Spirits, and ill digestion of Diet.

6. The Diseases of the Womb stop the Flux, as Inflammations, Schirrus, compression by Fat or other Tumors.

In pituitous Tempers whose Pulse is under 70 naturally, I have counted but 74 Pulses after the obstruction; in thin choleric Tempers above 100 Pulses after three months; suppression in Women are feverish,  
as

as *Hippocrates* observes, as in the *Febris Alba*, and they have a Febrile Horror.

If the suppression be thro' constriction of the Vessels, and in the beginning the Pulse is full, great, vehement.

When the Blood becomes grumous or serous, the Pulse is small, weak, unequal, but frequent.

The suppression may be thro' faults in the Vessels or Humors.

1. The small Pulse indicates the Cure of the quantity of Humors oppressing the Pulse, by Evacuation, as by Vomit, Purges.

2. The frequent and quick Pulse indicates the Evacuation by bleeding, to cure the Fever, and the Pains of the Head, difficulty of breath, palpitation of the Heart, bleed in the Arm, and Foot after, the Plethoric must bleed most.

3. The obstruction is opened by Vomits, *Emetic Tartar gr. 4.* after by Aloetics, Purges, *Tinct. Sacra. 2 ounces at Night, Pil. fatid 3j.* resin of Jalap  $\mathfrak{z}$ j. *Vitriol Martis 3ss.* oil of Amber, *gutt. 3.* for 16 Pills, or Amber Pills *3ss.* resin of Jalap *gr. vj.* flowers of *Sal Arm. Martiat gr. 4.* *Bals. Peruv.* make 6 Pills, or *spec. of Hiera Picra*, Steel prepar'd, syrup of opening Roots; make Pills, dose 3 at Night.

In viscid blood give *Merc. dulcis*, with the Purge, or in a Bolus at Night.

Add

Add Uterines to Glysters, or Purging Wines.

Take Sena 3vj. Agaric 3 drams, tops of Savin, Calamint, Penny-royal each Mj. Cloves 1 dram, Daucus seeds 2 drams, infuse in white Wine ℥ij.

4. For the serous or pituitous Cacochimia use Digestives of these Tastes.

1. The Lichnis Bitters, as Gentians; the Laminum bitters, as Motherwort; the Wormwood bitters, as Featherfew, Mugwort, Theriaca Diatesaron, decoction of Mugwort with oil of Fennil.

Conserve of Wormwood and Orange peels each 1 ounce, *Pulv. Ari* and Steel each half an ounce, Saffron half a dram, syrup of the opening roots, mix them; conserve of Tansie or the Juice.

2. The acrid Turpentine, Mfs. of Savin in beer boil'd, Conyza, *Juncus Odoratus*, *Asarum Spica Celtica*, Cedar in Wine, Savin 1 dram or 2, in Wine ℥iv. or oil of Juniper gutt. 10. in Wine.

3. The acrid Caustics, Aron roots, the flowers of *Ranunculus* in Wine, leaves of *Chelidon Minoris*, decoction of Dragon roots.

4. The Cephalic Acrids, *Nepeta*, *Pulegium*, Calamint, *Dictamnus* infus'd in Wine, Penny-royal Thea.

5. Chalybeats ℥j. of the filings of Steel in the pap of an Apple every Morning, for



a month, or the rust of Iron, *gr.* 15. or Anniseed, Liquorish *Enul. comp.* Steel each 1 ounce, Sugar 4 ounces, dose half a dram twice in a day.

Take Sorrel roots, Dandelion, Eryngo each 1 ounce, *Creme of Tartar*, Steel filings each 1 ounce, boil in water  $\text{lb}$  12. to 8. for ordinary Drink.

Take Mugwort, Savin, Penny-royal each *Mj.* Senna  $\text{ʒ}$  i ss. Zedoary  $\text{ʒ}$  ss. filings of Steel  $\text{ʒ}$  iij. infuse in white Wine  $\text{lb}$  iij. *Ens Veneris*, *Sal Martis*, with bitters in Pills.

6. The sweet Acrids, Loveage, Smallage, Commin-seeds, Angelica roots, in Wine, or their seeds.

7. The salt Tastes, spirit of *Sal Armoniac*, salt of Wormwood, *Elixir Propriet. Tartarizat*, *Sal Volatile Oleosum*.

8. The *fætid* Gums and Hysterics, Myrrh, *Galbanum* each  $\text{ʒ}$  j. *Assa fætida*, salt of Amber, *Castor* each  $\text{ʒ}$  ss. Saffron  $\text{ʒ}$  ss extract of Gentian; make Pills; Camphir in Wine or Myrrh, or *Assa fætida* is the same; boil *Vulvaria* in Posset-drink 'tis very *fætid*; dissolve *Assa fætida* in a Julep for a dead Child, or make Pills of Myrrh and *Castor* with extract of Gentian; give them at Night with an Hysteric Julep, or flowers of Marygold, or tops of Rue boild in Posset drink.

9. The Cress Acrids, seeds of Rocket  $\text{ʒ}$  j. Mustard seed Wine, spirit of Scurvygrafs

10. The

10. The Acrid Aromatics, Oil of Cloves or Cinnamon in Lozenges, Winter bark in Wine.

11. The Laurel Bitters, as Guaiacum, add Dictamnium to the decoction.

12. The Nauseous Bitters, as Briony, Aristolochia in Wine.

13. The colouring Acrids, as Madder, Curcuma infus'd in Wine, Saffron, Wine with tincture of Steel, Cochineal in Wine, syrup of Marygold flowers, or infuse them in Wine.

14. The Ferments help the motion of Blood, as stum or old Leaven the bigness of a Chestnut, with Sugar and Nutmeg; give it three mornings with Saffron wine.

The Volatile Salts, the *fatids* and acrid Diuretics, and colouring Acrids are the best Emenagoges which may be given near the time.

If the stoppage come from Passions, use Hysterics, if from external Cold, bleed and use Diaphoretics, as Volatile Salts, warm Baths.

*Hippocrates* gave 5 *Cantharides* in Wine, and he us'd seeds of Smallage or Watercresses in Wine, and he mixed some Medicines in the milk of a Bitch.

They who are Consumptive must use the Analeptic Diet; as Asses milk, but no great Evacuation or hot Uterines: But the mild ones, and Mineral Waters.

For

For a diminution of the *Menstrua* purge before the time, and bleed in the Foot.

The Externals are fumes, pessi, Baths; make a fume of Amber, Myrrh each ʒij. Coloquintida and Sulphur each ʒj. receive it by a Funnel.

Or the decoction of the scories of *Regulus Antimony*, put 2 spoonfuls on hot Flints, or

Boil the filings of Iron and *Sal Armoniac* in Urine.

The Fumes *Lapis Gagates* or Horns, or *Galbanum*, or Garlic.

Boil Matricaria, Penny-royal, Savin, Briony roots, Apples of Coloquintida, Bayberries each ʒj. in Water, receive the fumes.

Before the time a semicupium of Penny-royal, Mugwort, Mallows, Marjorams, Leeks, and use an Injection of the same; Cupping-glass to the Thighs, Frictions, Issues there, and frequent Glysters.

Boil Hony with Bull's Gall into a Pessus; mix Elatericum ʒss. with Sheeps suet; or a Pessus of Aloes ʒj. Hony ʒij. or a Pessus of Figs, with Thus, Myrrh and Niter; the strongest Pessi have Elatericum, Hellebor, *Albus*, *Cantharides*, Colocynth, Agaric.

The head of Garlic pounded with Oil of Spike included in a Bag, this is said to provoke with Pleasure and helps Conception; or put up a Gentian root or Briony in a Cloth, Lupine

Lupine Meal, Myrrh and Hony. Foment the lower parts of the Belly, or bath in a tepid Bath.

In dry Bodies drink Whey, with Rue or Centaury, *Elix. Proprietat.* or *Creme of Tartar* ʒij. with ʒj. of the *Salt of Tartar* in Whey ʒiij. or tinct. of *Steel*, and Elixir in Whey, see *Pil. Benedict.* in *Fuller Disp.* which I have us'd successfully.

The driness of the sight is occasioned by the stop of the *Menses*; Women of watry Constitutions have their *Menses* long, and when they stop they swell, and they often flow by Dysentery, the Nose, or Hamorrhoids and Vomiting, and *Hippocrates* mentions some of these Cases ʒiv. Epidem. and that a Woman wanted the *Menses* 7 Years, but had them by a Dysentery.

In thin choleric Bodies the Pulse is very frequent, and requires the cooler method in a pituitous Temper, the Pulse is more rare and requires a hotter method.

If the suppression of the *Menses* continue long, there is an erratic Fever and Horror, and the Pulse becomes weak, unequal, more rare.



## C H A P. XXVI.

*Pains make the Pulse greater, vehement, quicker and more frequent; but when 'tis increas'd to weaken the vital Spirits, the Pulse becomes less, more languid, quick and frequent; and at last languid, small, very frequent.*

1. **P**Ains proceed from the rarification of Blood and Spirits in Fevers, and Effervescencies, and these must therefore have that Pulse.

2. The visciditv of Blood obstructs in Inflammatory Pains, is also accompanied with a feverish Pulse; these are burning Pains.

3. The Nervous Pains depend on the Inflation or Convulsion by rarified Spirits; these are the tensive pains and wandering.

4. The Itching Pains are from salt Humors.

5. The pulsatory Pain is from obstructions of the circulatory Vessels, which are distended thereby in a Plethoric state.

6. The heavy pain from Serum or pituitous Lympha.

7. The pungent Pain from corrosive Humors, *Bile, Salso-Acid*, Wounds.

8. The *Osteocopus* from Vitriolic Humors in *Quartans*.

*Note*, That all pains do not alter the Pulse, unless they be very great, or affect some sensible or principal part.

The pains from Inflammations are to be cur'd like them, or like the hot flatulency from *Atra bilis*; other pains do not considerably alter the Pulse. The vehemency of the Pulse seems the true Characteristic of pains from Inflammations.

This great and frequent Pulse Indicates

1. The evacuation by bleeding and lenitive Purges to correct the fervor and effervescence of Humors, and fulness.

2. The cool Regimen to correct the rarification of them, by Opiates, Acids, Austeres, watry and mucilaginous Medicines.

3. The matter impacted into any part which irritates, must be discuss'd.

1. By Bleeding, Sudorifics, *Mercurial* Purges, Diuretics, Blisters, Cupping, Cauteries, Incision.

2. By External Topics.

1. Bitter Acrids, as Wormwood, Mugwort, Chamomoil.

2. By the Elder scetids, or by Saffron and Camphir.

O

3. By

3. By the *Salso-Acids*, as Lixivium or Lime-water, spirit of *Sal Armoniac* and spirit of Wine camphorated.

4. Acrid Insects, Oyl of Worms, Scorpions, Millipedes.

5. By Terebinthines, *Bals. Peru*, Gum *Tachamahac*, *Caranna*.

6. By Aromatic Acrids, Cummin-seed, Dill, Fennil, Oil of Dill.

4. The Pains must be allayed by *Narcotics* and *Anodynes* when the Pulse is languid, and *Ung. Popul.*  $\text{ʒij}$ . *Opium* gr. 4. or wash oil of Roses in Oxycrate  $\text{ʒij}$ . *Opium* gr. 4. apply it with a Rose Cake.

Oils and Mucilages relax the Skin when tense by Pains, Meats, Milk, Fat, and the *Omentum* of Animals.

Cold water cures the pains of the Gout, and it helps Convulsions and Cardialgia.

This is *Galen's* advice, (*De compos. medicam.*) for hot pains apply all Medicines cool'd in the coldest water, or that cool'd with Ice about the Vessel; this repels hot Humours from the Head: He says he try'd this in six hundred with success.

Externally cold Baths, Oxycrate and Opiates, cure all the hot flatulent Vapours which produce pain; after sufficient Bleeding and Purging, and Sudorificks, use the cool Topics.

*Sanctorius* advises to apply Snow or Ice in a Bladder, lapt in Linnen.

All

All the external Topics must be suited to the Cacochymia, and in vehement Pulses the cool Tastes.

The immediate cause of Pain is a distension by Blood and Serum tinctur'd with some Cacochymia, and stopt in their Circulation, or windy Lympha in the Nerves.

Pains arise from external Causes, as incision, Contusion, Fractures; or by Imposthumes or Worms; and these require a particular Cure.

Pains without Fevers were commonly relieved by the tepid Baths in the Old Writers, *multa calida Lavandum.*

Cold Baths relieve all hot Pains, pain on the Head on the first Day, is worse on the fourth, and has a Crisis on the 7th; if it happens on the third day they are worse, or the fifth, and have a Crisis on the ninth or eleventh; if the Pains happen on the fifth the Crisis is on the 14th.

The Pains on the Ear, with a Fever, oft kills on the seventh, if Young, but the Old later.

Pains from a flatulent Spirit are cur'd immediately by a Cupping-glass, with a Flame in any part.

By the small and slow Pulse we know the Pain is from a flatulent Spirit, or cool Humour, and in Old Pains we use hot Topics.



The Pulse is very small when a eruginous Humour affects the Stomach.

*Podagriac* Pains have their Crisis in forty Days.

Small abscesses in Fevers can do no good, and great ones kill with intolerable pain.

In pains of the Head from a Hysterical Convulsive Wind, the Pulse is Hysterical, and not like that in Inflammations; these pains require Hysterical Medicines, spirit of *Sal Armoniac* in a Glass of Water, to help the small Pulse, and Opiates to check the frequency.

In a Hemisrania there is a fizy Blood which causes an Inflammation in the External Parts, and the Pulse is as in Inflammations, and requires the same Cure.

In a periodic Head-ach there is an intermitting Fever and Pulse like it, which requires the *Cortex*, and Opiates to check the frequency of it, after sufficient Bleedings, Vomits and Purges.

External Causes, as Drunkenness, heat of the Sun, Exercise, hot Passions suppressed, Evacuations, Wounds, Bruises, occasions an Ephemera, or Effervescence of Humours, and then the Pulse is as in Ephemeræ's, and must be cur'd like that.

In pains from Inflammations, Imposthumes, Worms, or other Diseases of the Head, or any Disease in the Stomach, Spleen, Womb, Kidneys; the Pulse of the Original

nal Disease precedes the pain, and indicates the Cure.

In hot Catarrhs we use the same Medicines as in *Ephemeræ's*.

The vehement quick and frequent Pulse indicates Evacuations by bleeding and purging of the hot Cacochymia, Bile, salt *Serum*, or the *Atra bilis*; the vehement *Pulse* is a sign of some Inflammations in the Head, and requires the Evacuation of the fizy *Serum* by bleeding in the Jugulars, or by Leeches in the Temples, and by Cupping, and Hæmorrhoids and Blisters, and at last Sudorificks of the Woods and *Volatil Salts*.

The fizy Humour must be diluted and cooled by Acids, nitrous and watry Medicines, steel Waters and cold Baths.

Opiates check the vehemence of the *Pulse* and its frequency, and all Effervescences.

When the *Pulse* becomes languid, small, and frequent, we call it a cold Head-ach; we chiefly evacuate the *Serum* by Hydrogogues, Sudorificks, Issues, Blisters, Setons, Cupping, *Merc. Dulcis*, and warm Topics, Discutients.

1. Acrids; as Rue, or Garlic, and Vinegar, Pepper and Wine; oil of Millepedes, Rue, Walnuts, *Ung. Ros.* and Vinegar.

2. Bitters; as bitter Almonds pounded with Vinegar, *Peach* Kernels, and Vervain Water, Thus and Myrh, with the yolk of an Egg; boil Vervain in Oyl.

3. Foetids; scales of Iron boil'd in Vinegar, and receive the Fumes on the Head covered, apply Goat's dung with *Acetum Scylliticum*, a bag of Amber.

4. Narcotics; Elder flower Water six ounces, Rose Vinegar 1 ounce and half, Opium half a scruple, or juice of *Solanum* and Hony.

5. Aromatics; Calomint, Mint, Thyme, Marjoram boil'd, add Hungary-water, spirit of Lavender, Zedoary 1 dram, Elder water, ʒiij.

6. Salt; Lixivia or Ashes, fill a bag with Vine Ashes and Cephalic Aromatics, and sprinkle with spirit of Wine camphorated.

Apply fry'd Salt with Vervain and Chamomil and Millet, and *Lignum Rhodium*.

7. Caustics; *Ranunculus flammescus*, Euphorbium ʒij. *Ol. Aneth* ʒiv. Wax 3vj. for a Hemicrania.

All old pains are accounted cold, and will bear hot Medicines, but the fresh pains have usually a Fever, Effervescence, and quick frequent Pulse, and these must be cured before the pain will cease.

The rarified *Serum* over-fills the Lymphatics and Glands in Defluxions, and this is cured as a Catarrh.

The symptomatic Pains are usually by irritation of the Nerves in the Viscera; or by translation of Blood, Matter, or Serum.

A pain of the Head from the Pox must be cur'd by a *Salivation*.

Pains happen most in the Membranes which are made tense by the Bones, but in those of the Viscera; as Lungs, Liver; the Membranes are loose, less tense, and they have not much sense of pain by Inflammations.

Pain weakens the Spirits, by dissipating them, it causes Tumors by constringing the Vessels, it irritates Fevers by accelerating the Pulse. A quick and frequent Pulse indicates Opiates.



## CHAP. XXVII.

*In Hystericks, the Cure of the small, quick, frequent, and weak unequal Pulse.*

**T**HIS Pulse is the immediate Cause of the Hysteric and Hypochondriac Vapors and Passions, and all the Symptoms may be deduc'd from this Pulse, and the Causes which produce this Pulse produce this Disease.

The Symptoms in the Nerves are an irregular motion of Spirits, with Giddiness, Sleepiness, a general Lassitude, tingling or noise in the Ears, sparkling in the Eyes, inflation in the Head.

In the Fit, choaking, loss of Speech, setting of the Teeth, palpitation of the Heart, the Diaphragm is convulsed downward which forces out the Belly; in the Head there is a *Delirium*, with laughter or crying, some are sensible, others not, and they have convulsive motions in the Breast, Head and Belly, by which we may discern that hysteric Fits are an inward Epilepsy.

The Pulse in the Fit is low, stop'd or intermits and trembles, because the Convulsion constringes the Muscles of the Heart,

or

or shakes them ; the Muscles of the Belly or Diaphragm are alternately contracted, and in the declination of the Fits, the Body grows warm, the Colour returns, the Eyes open, and they sigh, and are sleepy after the Fits.

By all these Symptoms 'tis evident, that Hysterical Fits are seated in the Nerves, and were at first produc'd by a violent motion of the Spirits ; for the Spirits of the Hysterical are fiery and over-rarify'd, which produces a quick and frequent Circulation and Pulse, and from this violent motion of the Humors, an *Atrabilis* is produc'd in the Blood, which is a mixture of bitter Acid, and a volatile Acid, and this circulating thro' the Brain with high rarify'd Spirits, produces all the Convulsions attending this Disease.

The first disturbance of the Spirits is from Frights, great Passions, Sadness, offensive Smells ; and by these the Spirits are over-rarify'd and become windy, and restless, and some Passion fixes an Idea on the Mind, on which the Hysterical always study.

The suppression of the *Menstrua*, or *Semen* raise the Pulse, and produce a quicker and frequent Circulation, and produces an *Atrabilis*, with which, or some Particle of putrid Blood, the Spirits are infected, and the Hysterical Convulsions are produc'd by it ; if the Constitution be subject to hot windy Spi-

Spirit, from Passion or natural Constitution.

The Symptoms in the Blood are a florid thick Blood, apt to ferment, because all sweet things disagree with the Hysterical, as Milk, sweet Wines, Honey and Sugar; these excite Wind in the Stomach by fermenting too much there, and they heat the Blood: *Avicenna* forbids Wine to the Hysterical, and recommends Water, and no fermented Liquor agrees with them; and Women who drink strong Waters are most hysterical, and since hot Liquors disagree with the Hysterical, that proves, that their Bloods are over-rarify'd, and their Spirits too much expanded and agitated, and all sweet smells, by increasing that disposition, produce the Fits.

The stop which the Convulsion gives to the Pulse obscures the heat, and makes the Blood grumous, by causing a Flux of pale Water, as well as by its stagnation, stop in the *Menses*, Faintness and Coldness of the Extremities occasion'd the old Writers to impute this Disease to some cold Cause or acid Humors; but 'tis otherwise, for after the Fit the Body is hot, and the Water high-colour'd, like the Fit of a Fever; and this Fit returns periodically like it sometimes, because the vitriolic, acid, bilious Humor, cannot gather in the Nerve to a plenitude under so many days.

The

The coldness, pale Urine, thick Blood, depend on a stop of Circulation, not the crudity of Humors.

The natural cause of Windiness, is, a flatulent Spirit in the Chyle, Blood and nervous Juice ; this is made by great Heat and Passions.

The hot Hysterics will bear no hot Medicines, and the greater the Convulsions, the less hot must be the Medicines ; the hot Medicines are only proper for Obstructions, and fainting in the Fits.

The Symptoms in the Stomach are a sourness, burning, vomiting, bitter and sour Inflations, windiness, convulsive Pains ; all these depend on an atrabilarian Ferment, communicated by the Arteries and Nerves to the Stomach ; all four Ferments are most effective, and over-digestion produces a hot Wind and Sourness ; the stop in the Circulation makes all the Lymphas slimy and mucous ; the Hysterical are tender and subject to Defluxions, because of their violent Pulses, or in the Fits, by the separation of the Serum from the viscid Cake of Blood, the Belly is bound, they are very voracious.

The small and weak Pulse in the Fits indicate hot Medicines to excite a greater and stronger Pulse ; but out of the Fits the quick and frequent Pulse indicates the stopping the Pulse by a cool method ; and since contrary Pulses are mix'd, the method of Cure must  
be



be so too, that the fiery Spirits may be cooled, and the grumous Blood better moved; if the Spirits be more disorder'd than the Blood, we must use a cooler method, which we may know by the Pulse being 90 beats in a minute; but if the grumosity of the Blood exceeds, the Pulse is more moderate and rare in the cold Acidity, but in the hot Hystrics the Gall prevails.

1. The great rarefaction of the Spirits requires evacuation of the Choler and vitriolic Humor from the Stomach, as *Sal Vitrioli*, *Vinum Scylliticum*, and *Ipecacuanna*; *R. vin. Scylliticum, ol. amygdanum* &c. *sis. pro vomitorio.*

2. Cool lenitive Purges do most good; *crem. tart. sal catharticum, merc. dulcis*, this cools and keeps the Body open, repeat 'em or frequent Clysters.

3. Watry Liquors, as Chalibeat Waters, Wheys, distill'd Milk, Asses Milk, decoction of *Sarsa*.

4. Some Acids were try'd by the old Writers, *Acetum scylliticum* in decoction of Mugwort, *Castor* half a dram in Oxymsels, *Diospoliticum* in which there is Nitre; *Riverius* commends Tartar and Vitriol Martis to cool the hot Intemperies in these Fits, *sal Polychrestum, sal prunell.* with Crabs eyes may be try'd, and *tart. vitriolat.* with the same; all the foetid Gums may be dissolv'd in Vinegar and made into Pills, *sal succini* may

may be dissolv'd in Julep, spir. of Vitriol or Sulphur with a Glafs of Water, Swallow-water one spoonful. *gas sulphuris* in water: 'Tis certain Acids do not agree with some Hysterics, because they abound with Acids, and Acids stop the *Menses*, but mix'd Acids are most agreeable, as Vinegar one pound, Crabs-eyes four ounces, or *posca chalybeata*, *acetum scylliticum*.

5. Styptics constringe the Glands of the Brain, and stop the motion of Humors; such is *sal Jovis*, and *Bezoardicum Joviale*, which *Baglivius* commends, or *Antihecticum poterii*, *cas veneris*, and the styptic Chalybeats, these must be mix'd with hot Medicines, thus, Take *Fenicula bryon*, *Assa fetida*, *Castor*, of each one dram, *sal corall. succini*, *sal Jovis*, of each half a dram, *galbani in aqua hystirica soluti q.s.f. pil.* dose from half a scruple to a scruple *bis in die*. Pæony has a Fætor joyn'd with stypticity, and all aromatic Cephalics have a stypticity also.

*Riverius* prescribes strong Styptics mix'd with Bitters, as Tormentil, Mastic, Bole, and aromatic Acrids carminative.

No Styptic cures the Effervescence so well as the *Cortex* in *period. Fits*, which must be given with an Hysteric Julep.

The Magistery of Pearl and Coral are Styptics, and so is the Tincture of Coral.

6. Opiats compose the irregular motion of Spirits; mix tincture of *Castor*, spirit of *sal*  
Armo-

*Armoniac*, liquid *Laudanum*, give 20 or 30 drops at Night in Water.

7. Bleeding and Cupping two or three times agrees with the hot *Hysterics*.

We use a thin Diet against hot *Flatulencies*, and abstain from all Diet of a strong Odor, as Garlick, Smallage, Aromatics, windy Diet, as Legumens, sweet things, Cheese, too much Venery, Fasting, pungent Liquors bottl'd, Suppers, Surfeits, avoid Sadness, strong Smells, Passions, hot Baths, violent motions, warm Water one pound, with Wheat-flower one spoonful, for three Mornings.

Take a Pipin, slice it with some Ginger, let it stand all night with Water poured on, drink it in the Morning.

Consider the Passions of the *Hysterical*, and how to help them to their desires; use cold Baths and steel Waters, wash the Head every Morning, change the Place, drink Toast and Water, or Cyder and Water, ride in the Air, use cheerful Company.

The Cure in the Fits is by suppressing the *Flatulencies* by Acids, drink Oxycrate, and give it in Glysters, with oil of Rue, give the quantity of a Bean of Castor in Oxymel, give a Glyster of Anniseeds boiled in water, and let the Patient keep it long.

2. By strong Odors discuss, as oil of Amber, spirit of Vitriol mix'd in Pæony-water, spirit of *Sal Armoniac*, or *Assa fatida*, Fethers, Hair, Horse-Hoofs burnt; these hot Fumes oft disagree with hot Hysterics, unless Acids be mix'd: Add Castor and volatile Salts, of each one scruple, oil of Amber half a scruple, to a Carminative Glyster: Give *Pil. fatid.* one dram in the Fit, or *Galbanum* one dram dissolv'd in a Glyster, Sneeze-blyster.

3. Opiats mix'd with Fætids and Acids in cold water stops the Fits.

A *Pessus*, odorate Fumes below, Cupping-glasses to the *Inguen*, Ligatures, hot Uterines, Medicines against the *Semen* are Mistakes from the old Notion, that the Womb did rise upwards.



## C H A P. XXVIII.

*The small, unequal, intermitting Pulse in Vertigo's.*

**T**H E Pulse in the *Vertigo* is altered to smalness, inequality, and intermission, by the circumgyration of the Spirits in the Brain, by which they are diverted from their natural Flux into the Organs for Circulation, and that is thereby stopt in some degree.

The symptoms in the Nerves are dim Sight, noise in the Ears, the Feet stagger, and the Spirits are moved, round and represent all things to be so moved.

The Blood is hot in the Vertiginous, and the nervous Lympha too much rarified, and a *Vertigo* was ascribed to a hot Intemperies of the Liver, and hot Vapours from *bilious* Humours; the Pulse which produces the windy *Serum* must be an exceeding Pulse out of the Fits.

All things which produce an Effervescence of Humours produce the Fits, as strong Liquors, Aromatics, Surfeits, sleeping after Dinner, the South Wind, moist Air, strong Smell, smoaking Tabacco, Poysons, which  
are

ate hot Worms, Passions, great Labour, fumes of Metals.

A giddiness depends on these hot Diseases, old *Scarvy*, long Fevers, pains of the Head, all Evacuations suppressed by Issues, Hæmorrhages, Itch, the *Menses*, or usual Sweats stopt, Hypochondriacs and Hysterics are subject to giddiness.

The Spirits are irritated and agitated by Pains, Worms, sickness at Stomach, or obstructions of the Spleen or Womb, and Convulsions in any External Part, and they communicate an agitation to the Brain to disorder the flatulent Spirits.

A defect of Spirits in *Hæmorrhages*, fasting, labour, and other Evacuations disturb the Spirits.

The Cure of this Pulse is by diverting the windy *Serum* from the Head, by Bleeding, Vomiting, Glysters, Purging, Blisters, *Setons*, and opening the *Hæmorrhoids*, or procuring the *Menses*, and we must abstain from a windy fermenting hot Diet.

The Vertiginous motion of the *Spirits* must be compos'd by Opiates and Acids, or the motion obstructed must be helped by Castorines, and Acrids, *Succinats*, *Volatile Salts*, and all the other Antepileptics; and these will discuss the Vapours, and raise the Pulse to its due equality and greatness.

To prevent the returns of the Fits, we must cure the hot windy Cacochymia by Vomits, purges of *Merc. dulcis*, resin of Jalap, Amber Pills, or those of *Ammoniacum*, Alecephangin, upon the changes of the Moon.

The alteratives are the Watry, the Acids, and Opiates and Styptics, as the Cortex, and *Sal Martis*, Pæony, Eye-bright, Magisteries of Pearl, Coral, and Styptics, steel Waters.

The same Medicines cure the Vertigo as are us'd in the Epilepsie.

Water-drinking for a long time, cold Baths.

When Fœtids and Acrids are us'd, they must be mixed with Vinegar, Castor ʒj. in Mulsum for five days, all the hot Carminatives, as Dill, Hyssop, must be boiled in Oxymels, or used in Water, Dill seeds ʒj. in water, or seeds of Cow-Parsnep.

The Bitters must be joined with Opiates, as in Venice Treacle in old Diseases, when the Blood grows grumous by stopping often.

Cheese and strong Fœtids are forbid, Milk and all vaporous things, as Onions, Wines, Acrids, fat and salt Diet, which excite the Fits; keep the Head cool, and use cold Baths.

The

The Air has an elasticity, and much Air is contained in fermented and bottled Liquors, therefore these must be avoided.

If the Vertigo depends on Fasting or Evacuations, we must give Wines and hot Digestives, and hot Carminatives, Steel and Cordials.

If hot Humours affect the Stomach, they must be evacuated and attempered; if cold, then use the hot Digestives.

Avoid the hot Cephalics, Vertiginous motions, all flatulent Diet, as Legumens, fulness.

The Vertigo oft ends in the Epilepsie, because they proceed from the same Cause, a hot flatulency.

*Paracelsus* reckons Hysteric Fits, *Syncopes*, Palpitations, Vertigo, Extasie, as the species of the Epilepsie, to which sternutation, the Hiccough, Coughing and Convulsions may be added, and all these depend on a windy *Serum*, which irritates the Nerves for their expulsion.

That Vertigo is the worst which hinders the sight, and they fall, or which affects the hinder part of the Head, for that ends in a Palsie or Apoplexy.

An habitual Vertigo is difficultly cured.

That Vertigo which affects the fore part of the Head, oft ends in bleeding of the Nose or Head-ach, or flux of the *Hæmorrhoids*.



The explosion of the Spirits in Diseases of the Nerves, is like the Air in bottled Liquors; if it be over-rarified by external Heat, it expands and bursts the Vessels; so in the Nerves the Aerial Spirits are over-expanded by Heat, and in the Brain make a *circum rotation*, but in the Nerves convulsive motions.

*Ariteus* much commends cold Bathing for the Vertigo, *Astringere, decorsare, siccare caput frigida lavatio efficacissime potest.* And thus, *Vertiginosus cum ad cenam accedit maxime iterum in frigida lavetur purum unguine corpus sublineus.* He commends walking, and friction of the lower parts and Head.

---

## C H A P. XXIX.

*The Pulse is vehement, quick and small, in the beginning of an Epileptic Fit, in the end great, slow, and languid, as Areteus observed.*

**G**ALEN's description is this: Whilst Nature prevails there is no great change in the greatness, vehemence, celerity, crebriety and hardness of the Pulse, the Artery is only convulsed, and draws at both ends; but if the Disease be very great and exceeds the strength, the Pulse has an inequality and strong tension, and is less, more languid, slow and rare; but if it exceeds the strength very much, 'tis languid, small and frequent.

From the Pulse and its Causes, the hot Winds, the Epileptic Symptoms arises.

1. In the Nerves, loss of Sense, sudden falling; it returns by certain periods as the *Atra bilious* hot Winds can gather, in the Nerves, dulness and Vertigo preceed, want of sleep or too much, troublesome Dreams, Sadness, Fear, Twitching, Talking much, sparkling in the Eyes, apprehen-

sion of a foetid Smell, Anger, Night-Mare, immoderate Appetite, Neauseousness, much Spitting, nocturnal Pollutions; after the Fits they are dull, have pain in the Limbs, and are sad.

2. The symptoms in the Blood are, the Face is livid; Epilepsies both precede and follow Melancholics, which shews that Epilepsies has the same *Atra bilis* as produces hot flatulencies in the Nerves, and the Epilepsie is the highest degree of flatulencies; all sweet things excite the Fits by raising a Fermentation, such as Honey, Sugar, new Wines, Legumen, Cheese, Milk; a flatulent Spirit is the immediate cause of Convulsions, such as attends the *Atra bilis*.

This windiness or rarified Air is mixed with the Lympha of the Nerves, and if very great, the convulsive motions are great, but if less the Convulsion is weaker; and *Galen* deduces the Epilepsie from a pituitous Humour, full of a vaporous Spirit, obstructing the motion of the *Animal Spirits*, and that it happens in Melancholic Humours and acrid burnt Bile, and in these there is too much heat, rarification and windiness.

*Etmuller* imputes the *Epilepsie* to an acidity, but that is only the effect of a high fermentation; if Acids produced the Fit some pains would precede, and no Acids would agree. That

That the *Epilepsie* depends on too much heat in our Humours appears, because it requires a cool Diet. *Diocles* observes the thick Blood in flatulent Persons, by which he inferred that windiness depended on too much heat.

The external Cause excites the effervescence in the Humours, and the rarification of the Spirits, and these make the Pulse vehement and quick, but the tension of the Artery makes it small.

The heat of the *Sun*, strong Liquors, hot Baths, strong smells, changes of Weather, vehement Exercise, sudden Noises, Venery, strong Purges and Vomits, hot Fires, Crouds, Wine, Surfeits, foetid Smells, and all solicitude; Acrid, as Garlic, Goat's-flesh, muddy Fish, and all things which irritate the Blood and Spirits by heat, such are the caries of a *Skull*, Wounds, corrupt Humours in the Stomach, Ulcers, Evacuations suppressed, all pains by pricking Tendons, venomous Bites, breeding Teeth and violent Inflammations, Fractures, Contusions, hard Labour, sharp Purges, Cholic Pains, Poysons corroding, all these are occasions of the Fits.

The Convulsion by irritation depend on external Accidents, or corrosive Humors gathered in any part, as the extravasated *Serum* in the Brain. The Old Writers believed it a cold Disease, and gave infla-



ming Acrids to cure it, and because the Lympha of the Nerves was esteem'd by the Old Writers as a pituitous Humour.

The Pulse in Convulsions appears vehement and great, because the Artery is tense, and vibrated like a *Cord*, upwards and downward, and the Artery is contracted; by the tension and vibration of the Artery we must distinguish this Pulse.

In Convulsions from repletion the Nerves are filled with a hot windy Acrid, and Acid Lympha, and this is produced from the *Atrabilis*; and a greater and more frequent Pulse must produce it, and not only the Nerves are too much filled but the whole Body, and then the Pulse must be great and full.

Convulsions from inanition of the whole Body and Nerves, is known by a small, weak, vermicular, or formicant Pulse, as in great Bleeding, Vomiting, Purging, Fasting, Fever, Venery, which produce Convulsions; the Face and Body is cold, weak, pale in these Convulsions.

The great, and vehement, and frequent Pulses must be cured; and the Convulsion of the Artery by a cool method, and by removing the irritating Causes, as Evacuations suppressed, Worms, Pains, the translation of the febrile Humours diverted from the Brains; the Diseases on which it depends must be cured, as Hypochondriac and Hysteric

sterc Fits, Phrensie, Apoplexy, Stone, Scab drove in.

1. The *bilious Vitriolic* and *Salso-Acid* Lympha must be evacuated by gentle acid Vomits, as white Vitriol ʒj. once in a Month, give Children ʒss. two days before the new Moon.

Purge with *Merc. dulcis* and resin of Jalap, or *Pulv. Hermodactyl comp.* Pills of Amber, or fatid Pills, *Pil. Hieme cum Agarico.* Purging Waters, *extr. Hellebori nigri troch. albanda.*

We must suit the purges to the Constitutions of Humours; in the Hypochondriac they are Acid, in the *Bilious* Salt, in the Scorbutic *Salso-Acid.*

Make Issues in the Neck, or Blister, or Cup.

2. We must correct the hot flatulency and effervescency of the Humours.

1. By a watry Diet, decoction of *Sarsa*, with Cephalics, for drink Toast and Water, decoction of Mistleto. 'Tis *Aetius's* advise, *oportet egros in longo aque potu continere.* Milk distill'd with Cephalics, Peony and Hyssop boil'd in *Melicratum*, or Mead.

2. By Acids and *Salso-Acids*, four or six drops of spirit of Vitriol in Broths, or mix ʒij. of conserve of Peony, with half a dram of spirit of Vitriol, or with half a pound of the syrup, or oil of Vitriol gr. v. in Broths in a Morning, Swallow-Water three spoonfuls,

fuls with Sugar; mix spirit of Blood and Vitriol each, or Volatil Salt of Skulls and Amber, each one dram, in a Cephalic Julap one pound.

Take syrup of Peony or *Stechas*, *Acetum Seyliticum aq. peon comp.* each two ounces, dose each 1, spirit of Vitriol distilled with a Child's Urine; boil Peony roots in an Oxy-mel, and give Castor in it, *Acetum mulsum Julianizans*.

4. Styptics; as Peony, the Cortex, *Sal Martis*, boil Peony one ounce in two pound of water to one pound, three morning doses, add the compound water of Peony.

Take Peony seeds and roots, Peacock's dung each 1 ounce, Nutmegs preserv'd six drams, with syrup of Peony make an Electuary, add Amber and Cinnaber of Antimony each 3ij.

Take Polipody-roots and Fox-gloves each Mj. roots of Peony and Turmeric each 3ij. boil these in two pints of water to 1b. give two spoonfuls to a Child Morning and Night. This is a famous Medicine in our Country.

As to Diet we must abstain from Wine and strong Drinks.

*Floratus Augenius* says, Water-drinking lessens or prevents the Fits, use it for a month; drink a decoction of Sage and Cinnamon and some sugar. We must avoid all hot Diet, as Acrids, salt Aromatic, Vaporous,

rous, Windy, Vinous, Sweet, fat Meats, all which produce hot Winds. Suppers, Surfeits, hot Baths, the heat of the Fire or Crowd, Sollicitude, Venery, great Exercise, Study, windy Herbs, Fish, Milk, and sweet Taſts, muſt be avoided, the Body muſt be kept open, the Place and Diet changed, the Head ſhav'd and waſh'd with cold Water; avoid ſtrong ſmells of Bitumen, Sulphur, Turpentine, and ſweet Scents, quick Motions, Snuff, and all ſœtid Fumes.

*Maſſaria* ſays the Epileptic are never cured, becauſe Phyſicians only uſe the Lenitive Purges; but the Old Writers preſcribe Oxymel, Helleboratum, and Coliquintida infuſed in Wine.

We muſt oft uſe cold Baths, and Styptics inwardly, which ſtrengthen the Glands of the Brain, and ſtop Efferveſcencies, as 3j. of Pentaphyl-roots in a day, given in water; Cinnaber and the teſtaceous Medicines, as Coral and its Tincture are Styptics, the green ſpirit of Vitriol diſtill'd with Urine is deſcrib'd as *Sulphurious* and *Styptic*, *Ens Veneris* is Styptic and Salt, and ſo is *Flor. Sal Arm. Martiat.* decoction of Miſleto is bitteriſh and Styptic, and ſo is Vervain.

Blackcherry-tree bark, and *Populus Nigra*, and Chamedrys; give the Catkins of *Populus Nigra* in a Poſca.

Apply Bliſters, drawing Plaſters, Iſſues, Ligatures, Cauteries to the part whence the Vapour ariſes.

5. Lau-



5. *Laudanum* with Acids and Fætid's mixed, as *Sydenham Laud.* and spirit of Vitriol, Henbane-seeds gr. 8. to 20. for 40 days, in a spoonful of the syrup of Houseleek.

For Convulsions with Evacuations use Wine, Cordials, nourishing Diet and Opiates This happens to Children in the first Month, their looseness must be stopt by *Discordium*, white Drinks, *Laudanum liq. gutt.* 1, 2, or 3; give spirit of Hartshorn four or five drops in Black-cherry water.

Give Valerian roots ʒss.

Give shavings of Skull, or Elkes hoofs, Pæony seeds, Coral, Amber, *Sal succini* in powder with Castor, syr. Cichorii and Rhubarb ʒss. syrup of Rue.

Wash the convulsed parts with tincture of Castor, spirit of Lavender.

Some Convulsions happens to Children from a serous Humour in the Head, which must be evacuated by bleeding, by Leeches in the Hands and Neck, and purged oft with resin of Jalap and *Merc. dulcis*, Issues in the Neck, or Blisters behind the Ears. Let the Nurse abstain from windy Meats and Venery, and drink Barly-water and Cinnamon boil'd in it, or Anniseeds, or Posset-drink with Pæony-roots, and give *Antispasmodics* to her, anoint the Spine with Oil of Rue and Amber.

For Convulsions from pain of the Teeth, *Laudanum*, Bleeding, Blistering, Vomiting, Purg-

Purging, spirit of Hartshorn, as in other inflammatory Pains, which are the stimulus as well as the acrid Serum in the Head of the young Children ; in which Case Milk is bad, tho' proper in inflammatory Pains.

The Body of the Artery seems contracted in Convulsions, and like a hollow gut stretched out at both ends, and the motion of the Artery is like a Chord shaken, so that the distention of the Artery, and its contraction are not perceptible, but it vibrates and leaps upwards, and is contracted inwards ; 'tis sometimes a vehement and great Pulse, and there is a tension and convulsion of the Artery in the Fits. 'Tis sometime mixt with the Pulse in sleepy Diseases, and then the Convulsion and Tension are not easily discerned.

This Convulsive Pulse shews the Disease in the Fit ; but the Pulse exceeding before the Disease, must breed the *Atrabilis* and windiness, or acrid Serum, which is the immediate cause of the Fits, as appears by the evacuation of Blood by the *Menses*, Piles, or Dysenteries, which cures Convulsions ; and Infants who have crusty Scabs on the Head, are not subject to Epilepsies, and the *Quartan* cures a long Epilepsy.

6. All the hot flatulencies in the Fits are discussed by hot Medicines, and these are good for the stagnation of the Nervous Lympha.

1. The

1. The foetid Acrids, syrup of Rue, or Rue Mj. boil'd in Milk ℥ij. or Rue Vinegar.

2. The Castor foetids half a dram, in Oxy-mel to one dram.

3. Amber foetids four drops in Lime-tree water, *Sal succin.* 3j. in a Julep of ℥j.

4. Foetid Sulphurs, Cinnabar.

5. Foetid Urinous Salts, spirit of Skulls, or 3j. of Volatile Salt in Glysters.

6. Camphorates, *aq. Camphorata.*

7. Foetid Gums, Rue-water ℥j. dissolve in it *Assa foetida* 3j. or 3j. in Black-cherry water 3ij.

8. The foetid or nauseous Briony-roots; Briony-roots 3j. in Wine for a years time, or 3j. of *Aristolochia* in water, one spoonful of the syrup of stinking Orach; boil Fox-glove leaves and Polipody-roots each Mj. in water ℥ij. to half, sweeten it with Sugar; give one spoonful to Children.

9. The foetid parts of Animals; powder of Bore's stones, or of a Horse, Cock, Ram, or Man's Skull, the powder of a Secundine, Blood powdered 3ss. the Bones of a Ferret's back, the Spine of a Fish. Take these with sugar in Wine and Black-cherry water for twenty days, drink four ounces of Blood, taken in a warm Porringer, the dung of a Peacock, the Liver of an Ass, the *Coagulum* of a Hare, the powder of a Swallow, Raven, Jay, Cuckoo dry'd, the Gall of a Whelp;  
the

the Liver of Frogs, the Warts of Colts, Crows-eggs; *Augenius* cured an Epileptic after 25, with two ounces of *Sanguis Mustelæ* in Vinegar 3j. Musk in Wine, humane Bones.

10. Fœtid Turpentine, roots of Valerian 3j. Nardus, Asarum, *Serpentaria*, conserve *Arboris vitæ Conyza*, *Petasitis*.

11. Fœtid Lamium, Clary, Cardiacæ, *Galleopsis Ballote*.

12. Mosses of an Earthy smell, *Muscus Pixidatus*, *Clavellatus*.

13. Fœtid Legumens, Goat's-rue, *Anthyllis Altera*.

14. Laurel Acrids, decoction of Guaiacum for 40 days.

15. The ashes of Swallows, Ass-hoofs, Bones, Cow-dung calcined.

16. The sweet Fœtid, Sphondylus with Water.

17. The burning Acrids, Pyrethrum, Wine of Squills.

I have mentioned all these Specifics to shew how they differ in taste, and consequently in Virtue, that they may be suited to each Constitution, tho' these hot Specifics can discuss flatulency, they cannot cure the Epilepsie, which requires a cool method, against the breeding of the hot flatulencies, and against the effervescence of Humours, such are the watery, acid, styptic, and narcotic Medicines, which are indicated to stop exceeding Pulses; the Old Writers imputed  
the



the Epilepsie to an obstruction in the *Ventricles* of the Brain, by a pituitous Humour, and by this nice Philosophical Fancy they depraved the Practice in the Epilepsie, by giving very hot Medicines an attenuating Diet; but by the exceeding Pulses we may discern the rarification of the Blood and Spirits, and the breeding of the *Bilis Atra* by excess of Heat.

That Epilepsie is least dangerous whose Fits are short, and the Convulsions small, and the Breath is free, and the Pulse least Tense, Convulsed, and Altered.

That Epilepsie is most curable that affects the Extremities, and the Pulse and Respiration little, and depends on Accidents.

The Hereditary Epilepsie is rarely cured, nor in Old Men, or after 25.

If the Convulsions be great and long, they vitiate the Animal Actions, and the Excrements flow; small Children commonly die not long after their Births.

Men are more subject than Women, and the most Ingenious, as *Mahomet* and *Cesar*; the Flux of the *Menstrua* help Women. Infants are subject to Epilepsies, because their Constitution is hot and ferrous.

In an habitual Epilepsie, as long as the Appetite continues the Disease increases, and as that abates the Disease decreases.

Young Epileptics are cured by change of Diet, Air, Age, but it many times leaves a Deformity, a Palsy in the Hand, or distortion in the Face.

It contracts the Muscles of the Eyes to cause squinting, they become Blind, Deaf, the Tongue Hesitates, or dry Coughs happen which last long, the Hands grow weak or decays, the Leg haults, the Ribs are distorted, the Belly is pained, a Rupture happens, or swelling of the *Stones*, or Inflation of the Breasts, a Fever or Leprosie cures it.

The Caries of a Bone in the *Pocky Epilepsie* is cured by actual Cautery, Sudorifics, and *Mercurials*.

In all old *Epilepsies*, *Mercurius dulcis* given till a Salivation rises is good.

For *Epilepsie* from an Ulcer dry'd up *Mercurial* Purges, decoction of Guaicum, Issues, Cauteries, Baths, Lotions, with a Lixivium and Sulphur, a plaister of *Oxyroceum*, and *Euphorbium*.

For young Maids seiz'd with *Epilepsies* before their *Menses*, bleed in the Foot, use tepid Baths, and give Myrrh and Castor,

Q

and

and *Sal Martis*, with extract of Gentian in Pills.

Strong Vomits and Purges do most injury when the Convulsion depends on the Head and windy Spirits.

The *Epilepsies* which happen to Women in Travail and by Worms, are not apt to return; Epileptic Women are most healthful when with Child.

The Epilepsie is cured in seven months, or seven years, or at fourteen, upon the first Coition or Birth, or first eruption of the *Menses*; young Men are more curable if given to Labour, nor any Injury has happened to the Mind, as Stupidity, Foolishness, Melancholy, Palsie.

The Epilepsie in a Woman with Child, occasions Miscarriage; for this bleed often.

The Epilepsie from Melancholy oft ends in Apoplexy, Palsie, Madness, or in a Sopor, if the hot Spirits evaporate.

An ill *Crisis* in Fevers, Vertigo, Torpor, or Inflation of the Head, are the beginning of Convulsions, a scald Head ill cur'd.

An Epilepsie is cured by a Mania, the fatuity is helped by *Sal Volatile*, Aromatics, Cephalics, and Steel-waters, and cold Baths.

The hot Specifics if at any time are most proper, when the Diseases has lasted long, and made the Pulse weak and small, thro' the grumosity of the Blood, which is produced

duc'd by the stop of the Circulation in the Fits, and when the Disease tends towards a Palsie or Apoplexy ; and the use of Theriaca is commended in all cold Diseases, for a years time.

The Cure of the Epilepsie in the Fits.

1. The fermenting mass must be evacuated by Glyster and Vomits, if possible of *Oxymel Scylliticum* ℥ij. *Castor* ℥ij.

2. The oppressed *Animal Spirits* must be excited by Acrids and Foetids, all revulsions must be made from the Head by bleeding, Blisters, Frictions, Ligatures.

The Convulsive motions may be stopt by Opiates.

The flatulency are discussed by Acids mixt with Foetids.

Take Peony water ℥iv. Venice Treacle ℥j. spirit of Vitriol gutt. 10. for two doses.

Anoint the Ears, Nose, Temples, with Apoplectic Balsam, and Oil of Amber, Rosemary Water ; use fumes of *Assafoetida*, Rue, Galbanum in Vinegar.

Use Snuff, with black Hellebor, Castor, Marum.

Make a *Suffitus* with Rue Vinegar from a heated Tile.

Apply a live Pigeon to the *Anus* ; Convulsions after great Fluxes are ill, and after strong Purges, and upon an Illiac Passion, the *Menses* and *Lochia*.



In acute Fevers, Convulsions and Pains about the Viscera are ill signs.

In a Fever, not intermitting, if the Eye, Lip, Nose, Brow, Eyelids, be convulsed, 'tis an ill sign; a Convulsion after a Phrensie is fatal, and after watching, desipency and wounds, a Fever after a Convulsion cures it.

Grating the Teeth is a Convulsion of the temporal Muscles, and a sign of Phrenzy or Death.

If the Body be bound in Children, and they oft change Colour, and want sleep, 'tis a sign of Convulsions in a Fever.

The *Incubus* is a Convulsion of the Lungs which intercepts the Voice, and suffocates. The Heart is also Convulsed, which makes the apprehension of some weight lying on the Breast, and all the Body is immovable, and the Nerves of the *Genitals* are inflated, which gives an apprehension of a Venereal Coition, the Pulse also intermits; this must be imputed to some hot windiness in the Spirit, because this Disease oft ends in an Epilepsie, Delirium, or Apoplexies, which depend on hot Blood and rarified Spirits, which in this Disease oppres and stop the Circulation, and excites false Idea's of a Dæmon in the imagination.

This must be cured by the cool Antiepileptic Method, with Evacuations.

Fevers which have excessive rigour, are not judg'd, till the state cures the rigor.

A Rigor happening in a Fever, not intermitting, when the Patient is weak, is fatal.

If a Rigor happens in a burning Fever, it cures it.

Rigors happen to Women in the Loins, and go to the Head by the Back; to Men also behind more than before, from the Cubits and Thighs.

The great Blood-Vessels and Nerve go along the Back, and all Rigor and Convulsions are occasioned by stopping the Circulation, by the Oppression on the Spirits, or constriction on the Heart, and the chilness attending the stop of the Pulse and Circulation, was supposed to be from some cold Cacochymia.

## C H A P. XXX.

*The Pulse is small, and weak, and frequent in the Syncope, at last rare and intermitting.*

**I**N this Disease the Blood moves slowly for want of a sufficient quantity of Blood and Spirits, or their Motion obstructed.

The Causes which abate the quantity of Spirits, are Evacuations by Cholera, Sweat, Diarrhæa, Dysenteries, *Fluxus Muliebris*, Wounds, Hæmorrhoids and other Hæmorrhages, *Boulimia*, Convulsions, Epilepsies, thin hot Constitutions and malignant Fevers, ill Humors in the Stomach, old Age, vehement Passions, especially Fear and Sadness, breaking of Impostumes, strong Purges, Evacuation of Dropsies by *Paracentesis*, excessive Pains, the Wounds of Nerves or Tendons, Gangrenes, great Venery, Watchings, Fevers, Consumption.

All these Causes hinder the distribution of the Animal Spirits into the Muscles of the Heart and Lungs, to promote Pulsation and Respiration, which are the immediate Causes of the Circulation.

These

These Symptoms depend on the Blood little rarify'd, or its defects.

If the Blood be viscous, it produces little Spirits, or hinders their Secretion.

There is a coagulation of the Blood in some putrid Fevers, Poisons, Plague, Scurvy destroys the Fibres of the Blood, and gangrenes, and all hot malignant Fevers, as Measles, Small-pox, and these produce Faintings.

Many Diseases stop the Circulation, as *Polypus*, Pulpitation, hysteric Convulsions, Opiats, Wounds of the Vessels.

In Faintings the motion of the Blood and Pulse must be accelerated.

1. By Vomits and Aloetics, to evacuate ill Humors or Poisons from the Stomach.

2. The Cordials excite the motion of Blood and Spirits, or increase their quantity.

1. Aromatic Wines, as Balm, Mint-waters, Orange-flower, *Aqua Mirabilis*, Lily of the Valleys, syrup of Cloves, confect of *Alcherms*, oil of Cinnamon, Cloves, Citron, 6 drops in a Julep with Pearl.

3. The odoriferous Tincture of Musk and Ambergreese, extracted with spirit of Citron or Balm, ten Orange-flowers in Sack three pound, or Clovegillyflowers an ounce in two pound of Sack, or four Nutmegs cut into four quarters, spirit of Roses, or Lily in the Valley, take Cinnamon two ounces, Cloves two drams, spirit of Wine 2 pound,



Ginger two drams, extract the Tincture, to the straining add Ambergreese and Musk of each ten grains, dos. cochlear j.

For the Melancholic, Confect of Alcherms two ounces, Margaret *prep.* two drams, Saffron, Cochineal, of each one scruple, *Lapis Lazuli* wash'd and *Prep.* one dram; mixed with syr. of Cloves.

Distil 40 or 50 Orange-pills with a Gallon of Sack.

Give Ippocras wine with oil of Cloves or Cinamon one drop.

4. Volatile Salts, *Sal volatile oleosum*, or spirit of Lavendar and spirit of *Sal Armoniac.*

Infuse two drams of Cochinell in 1 pound of any Cordial, and sweeten it.

All the strong Cephalics and Fetids, Saffron-wine, spir. of Clary with *Castor* or *Assafetida* dissolved, Venice-Treacle.

In all great Evacuations use the restorative Diet, because the Pulse is low; as boild Ale, burnt Wine, Yolks of Eggs with Canary, Gelly-broths, steel-wine; we must use the Diet and Medicines against the several Causes of Faintness, as Worms, Consumptions, Jaundice, &c.

Lay the Person on his Back, sprinkle cold Water to excite, use Friction, Ligatures, Sternutation, excite Vomiting.

All Fluxes must be stopt, carry Saffron in a Nodule at the Heart.

A Fever on the Spirits has cold Sweats, Faintness, weakness of Motion, quick, weak, trembling Pulse, with *Deliriums*, Watching, Despondency, blackness of Extremities, and small Respiration: This *Celsus Aurelianus* calls the *Cardiaca Passio*.

Take Venice-Treacle, Confect of Alchermes, of each half a dram, Goa-stone two scruples, Saffron and Castor of each 3 grains, make a Bolus.

Take *Serpent. contrayerva cum pulv. e chel. comp.* of each one dram, *Sal Absynthii*, Cochinel of each half a dram, give one scruple for a dose once in two or three hours.

Drink Treaclewater after them till the Patient sweats very plentifully.

The *Cortex* after the Pulse is raised cures the Fever; and when that is done use Steel, as *Sal Martis* to help the Circulation.

Blisters help the Pulse.

All Fainting depends on the stop of the Circulation; for if the *Vena Cava* be pressed, or the great Artery, the Animal faints.

One drop of oil of Cinnamon gives a Taste to fourteen drops of Water; by which we may guess how much is necessary to impregnate fourteen pound of Blood.

Clear Air revives the Spirits, and the cold, but the moist Air dulls them; Anger, Joy and Hope cheers them, Fear, Terror  
and

and Sadness stops the Motion of Spirits and the Circulation.

Wine mix'd with cold Water stops Evacuations, and so does cold Baths.

In hot *Cacochymias* the cooling Method is proper, in the cold *Cacochymias* and Pulses, the hot Regimen.

If the Fainting be from Obstructions the Pulse is unequal in greatness, smalness, vehemence and weakness, and if great the Pulse intermits.

## C H A P. XXXI.

*The Cure of the Pulse which is little, hard, quick, and frequent in the beginning of Apoplexies and Palsie; and when the Spirits are much oppressed, the Pulse is intermitting, slow, and rare; at last languid and small, quick.*

**T**HE quick and frequent hard Pulses depends on the Inflammation and sify Blood, which stops the Circulation in the Brain, and by an oppression or extravasation hinders the motion of the Animal Spirits.

The

The Lethargy differs from the Apoplexy only in degrees of oppression, and have both a Fever and fizy Blood.

The Pulse in the Lethargy is soft, undous, weak, or intermitting; the Breath is great and rare, unequal and quick, and the Pulse slow, rare, languid, when the oppression is great, the *Cerebellum* seems oppressed in Lethargies, and the whole Brain in Apoplexies.

The oppression on the Pulse produces a slow Circulation, coldness in the Extremities, unequal Respiration, *Stertor Phrenitis*, in some Delirium, loss of Motion, Stupor, Tremor, the Urine is turbid.

The Apoplexy is distinguish'd according to the several Cacochemical Bodies it falls into, but particularly the hot sanguineous or Inflammatory Apoplexy, and the cold or serous from the stop of the Circulation of the *Lympha* thro' the Brain; on this depends the *Somnolentia*, or *Carus* and *Coma*, and in this Case there is no Fever, but the *Lympha* is too mucilaginous, or the Glands swell'd, or the Canals oppressed by some Tumor, and in these sleepy Diseases the Pulse is undous, rare and slow.

The Causes of the sizziness are, cold Air, strong Liquors, and all the hot Regimen, Anger and Passions, the suppression of Evacuations by the *menfes*, or Hæmorrhoids, or Hæmorrhages, occasion a fulness of Blood.

It



It was a fault of the Ancients to impute all sleepy Diseases to cold Humors, which depend on the compression of the Brain; this occasions the mistake of using too many hot Cephalics in them, both inwardly and outwardly, which are mischievous in the beginning of Apoplexies, till large Evacuations have been made, and a Palsie remains when the Inflammation is spent.

The Compression of the Brain by Impostumes, Water, the translation of Blood by Fevers, depression of the Skull, and extravasation of Blood produce a *Carus*, in which the Respiration is not alter'd.

In the Palsy there is the same sizy Blood as in an Apoplexy, and that is only a general Palsy.

These Diseases succeed Colics, Rheumatisms, Gout, Fever, stoppage of any Evacuation, Drukenness, and the Matter requires Revulsion.

For the Fever we bleed in the Arm, Jugulars, and cup to 30 or 40 ounces, or 60.

A Surfeit requires a Vomit, but Purging is mischievous in the beginning of the Inflammation, as well as others, but strong Glysters are good, and Blisters.

An intermitting Fever accompanies Inflammatory Apoplexies, Lethargies, Palsies, and sometimes the *Carus*, and after general Evacuations the *Cortex* is necessary.

For

For the oppressed Pulse we must use those Nervines which excite the Spirits, as volatile Salts, Amber, and Castor Fætid, and the Aromatic Acrids.

In the hot Constitutions and high Fevers we mix Acids with the Nervines, Castor 1 dram in 2 ounces of an Oxymel, *Diaspolicum* one spoonful with *Posca*, oil of Sulphur in Cephalic Juleps, or oil of Vitriol, or Oxymel *scylliticum*, spirit of Lavendar 2 ounces, Gas sulphuris 2 ounces, Pæony-water 6 ounces, dose, one spoonful.

The *Indians* use Garlick.

*Spiricus Cranii*, or spirit of sal Armoniac, with Camphir, Venice-Treacle 2 drams, *sal succini*, *Cerv.* of each half a dram, *ol. succin. rorism.* of each 4 drops, mix them and give them a little at a time.

The Pulse stops in the beginning of Apoplexies, but after Bleeding rises to be greater and stronger; but if we bleed excessively, that will sink the Pulse again; and how to preserve that high Pulse, is always to be considered as the most beneficial aim in the curing of Apoplexies, which are only Symptoms of intermitting Fevers.

Use Fætid Fumes to excite the Spirits, Galbanum boil'd in Vinegar, or any medicated Vinegar, pour it on a hot Iron, Hair, Horn, Sulphur, Bitumen burnt.

Give *Assa fatida* dissolv'd into Milk, give Rue, Valerian-roots or Pæony boil'd in Beer.  
Shave

Shave the Head, and foment it with Rue and Castor boil'd in *Posca*, or anoint with oil of Rue and Vinegar, or apply Mustard-seed and Vinegar, or Wormwood, Nitre and Vinegar for a Cataplasme.

Give Sneezing-Powders, apply a hot Iron to the Head shav'd, or rather, put the Patient into cold Water, scarify the Head and apply Cupping-glasses or hot Fomentations.

Keep out of Bed 8 hours, rub the Tongue with Mustard, syringe *Aqua vita* into the Nose, apply Cupping to the Neck and Shoulders, purge with *Diagoyd.* gr. 14. Castor gr. 10. or *Pil. Coch.* 1 dram dissolved in *aq. vita*, add infus. of *Croc. metall.* 4 ounces to the Glyster, or *Crocus metall.* gr. 10 to 20 in a Nodule

Put the Feet into warm Water and apply Cataplasms to them.

But all hot Applications and Medicines are injurious, till sufficient Evacuations and Revulsions have been made; because the Apoplexy has a Fever and Inflammation join'd to it, which requires a thin Diet, and cool Alteratives for 14 days.

To prevent the Apoplexy we must cure the sify Blood by Water-drinking and cold Baths, washing the Head in cold Water, and we must avoid strong Drinks and Suppers; purge oft with Amber Pills, and resin of Jalap, open the Hæmorrhoids; make Issues betwixt the Shoulders, abstain from Wine,

Passion

Passion and Study, chew Mastard-seed and Cubebs often, use Cephalic Acrids, and the Antiscorbutics and Vomiting helps the Motion of Blood, and Cephalic Acrids.

In a Sleepiness from an evident Cause, there is most hopes, and the more difficultly they are awak'd, the more is the danger.

If Opiats produce a Sleepiness, we must vomit them up and use strong Purges, then correct them with Acids.

The Relapses in Apoplexies depend on the Fever intermitting.

If the Respiration keep any order, the Apoplexy is weak, and usually ends in a Palsy; but if the Respiration be violent, difficult, unequal, intermitting or inordinate, the Disease is dangerous; but a *Stertor* and Froth about the Mouth shew it to be fatal, especially if with colliquative Sweats.

An Apoplexy usually kills in 7 days, if the Fever don't cure it, and that must be from the beginning intermitting, but not a slow Fever, but a strong Fever helps the Circulation in the Head.

If any one be Apoplectic from Fumes, remove them into the Air.

There is little hopes, if the Excrements be not retain'd.

Errhines, Stermitories, Apophlegmatisms are not to be used at first.

The Apoplexy oft ends by Spitting as well as a Palsy.

They



They who recover of the Lethargy spit much, the sily *Serum* being translated from the Head to the Lungs, by the Jugulars, and a long digestion makes it appear purulent.

The Lethargic die in 7 days, but if they escape then, they recover. By the putrid *Serum*, the old Writers understood the siness of Blood in Lethargies.

A Lethargy after a malignant Fever, Headach, Gout, Cholic, Epilepsy, Phrenzy, *Mania*, in old Age, great weakness, or a Cacochemical Constitution is commonly fatal, and all Vomits and Purges are improper.

A Phrenzy heals a Lethargy, and in a mixt Case of both, the Pulses are mixt, and the Disease inclines to either.

The ill Signs in Lethargies: Great Symptoms, weak Strength, thin Urine, loose Stools, cold Sweats, Trembling, *Stertor*, Convulsion, unequal Breath.

A *Carus* after great Evacuations or Pains, is fatal, and in Fevers.

A Sleepiness with Headach and Heaviness is a sign of Convulsions.

## C H A P. XXXII.

*The Cure of the Pulse in the Palsie, which is small, quick and frequent, in the beginning, but afterwards rare, slow, small, intermitting, languid.*

**T**HE Pulse of the Apoplectic and Paralytic are alike, and therefore are cured in the same way.

1. In the beginning, for the frequent Pulse in the Palsie, we Bleed and give strong Glysters, as in Rheumatisms and Apoplexies, if the Pulse be Feverish, and Urine high colour'd.

2. If it depends on external Causes, as Wounds, Falls, cold Mercury, Bleeding, Purging, and Sudorifics, are good.

3. If it succeeds Apoplexy, Cholic, Rheumatism, Gout, Scurvy, sharp Glysters and Sudorifics are commended.

4. If it depends on Evacuations suppress'd, or Erysipelas drove in, they must be restored.

5. A scorbutic Palsie requires general Evacuations, and decoction of the Woods, with spirit of *Sal Armoniac*, and Vomits.

R

For

For the small oppressed Pulse after three weeks, we use the following method.

1. Sudorifics are good in all Palsies, if given for a month, decoction of Boxwood  $\mathfrak{z}$ ss. with Limon-peels in Water  $\mathfrak{t}\mathfrak{b}\mathfrak{j}$ .

Sweat with spirit of Wine outwardly, for three weeks; this method must be used, and Baths and Fomentations are used of Acrids, and Cephalics, Venice-Treacle, Wood-drinks.

2. Diuretics of Turpentine, Acrids, decoction of Elacampane-roots, spirit of Juniper-berries, decoction of Pine, Turpentine-Pills, Balsam of Sulphur succinated, *Fryars* Balsam.

3. We must open the Glands by Acrid, Aromatic, Cephalic, or Fœtids.

Take Sassafras  $\mathfrak{z}$ ii. two Oranges stickt with Cloves, Thyme, Rosemary, Sage, Marjoram, Water-creffes, Wormwood each Mij. for four gallons of Ale.

As they may be made of Betony, Rosemary, Sage, and spirit of Lavender dropt into it.

Take conserve of Rosemary and Scurvy-grafs each  $\mathfrak{z}$ ii. *spec. diambra, pulv. ari comp. cum*  $\mathfrak{z}$ iiij. *Sal Absynthi*  $\mathfrak{z}$ j. Cubebs, Zedoary each  $\mathfrak{z}$ j. with syrup of Ginger.

Take Peony-roots and feeds each  $\mathfrak{z}$ iv. Lavender, Scurvy-grafs and Sage each Mvj. sweet Fennil-seeds  $\mathfrak{z}$ ij. Nutmeg  $\mathfrak{z}$ ij. Cubebs  $\mathfrak{z}$ j. Castor, Cardamom  $\mathfrak{z}$ ss. hang these in six gallons.

Use Tincture of Castor, or Antimony, or Steel, *Assa fatida* dissolved, Tincture of Amber.

Viper

Viper Wine, Lozenges of Oyl of Amber  
 ʒi. spec. Diamb. ʒss. in Sugar lbj.

Castor, Galbanum, Myrrh, *Assa fætida*,  
 may be made into Pills, Volatil Salts, and  
 all the Acrid Gums.

4. We must use Purgings with the Sudorifics to evacuate the serous Humour, Venice Treacle at Night; add Millepedes to the Wood-drinks.

5. At last we must use Digestives to cure the serous Humour, or Viscidity, such are the bitter Acrids, and Chalybeats, Mustard-seed, and the Antiscorbutics, which help the stopt Circulation.

The obstruction in the Back, Marrow, makes a Palsie of one side, but in any Nerve a particular Palsie.

6. Hot Externals and a Bath of a Fox with Cephalic Acrids, apply Mustard-seed with *Aq. Vita*, anoint with Goose-grease and spirit of Lavender, Rosemary, anoint the Neck with Oil of *Spike*; use hot Baths to Decripids, and cold to younger Persons; spirit of Wine camphorated, Goose-grease ʒiij. Oil *Peter* ʒj.

A Bath of Ants and Aromatic Acrids, Badger's grease with Oil of Nutmegs to the Spine.

For distorted Mouths bleeding in the Arm, and Leeches to the Neck, Blisters, Issues, Fomentations, decoction of Woods, Sweating with Volatile Salts, Errhines, Purges, Cupping.



For a Palsie of the Tongue, Gargarisms, with Mustard and Cephalics, Oxymel, Scylliticum, Oil of Anniseeds and Treacle under the Tongue, spirit of Lavender and Sugar.

For a Palsy after the Cholic, anointing of the Spine, hot Baths, Purging, decoction of Guaiacum, Venice-Treacle, spirit of Turpentine dropt in Broths.

Apply old Leaven, Mustard-seed and Vinegar, till the place be red.

Anoint with *Fryar's Balsam*, or infuse Mustard-seed, Pepper, Cloves, in Brandy.

Boil  $\text{z}ij.$  of Squills in Bore's-grease *thi.* or *Ranunculus* or Garlick to anoint, and use Gum-Plaisters.

Anoint with spirit of Rosemary and spirit of *Sal Armoniac*, and Tincture of Castor, and spirit of Lavender each  $\text{z}ss.$  mix these with Oil of Worms as much as to anoint.

For the resolution of the *Anus* a Cephalic and Styptic Decoction to foment, and Fumes from Cephalic Wines.

Those things agree with a Stupor and Tremor which are proper for a Palsie: The cause of a Tremor is a convulsive Motion joined with the voluntary; 'tis produc'd by Surfeits, Narcotics, Convulsions, Passions of Fear and Anger, Terror, Mineral Fumes, external Cold.

A Stupor is from compression of a Nerve, or Blood-Vessels; a Stupor of a Member precedes a Palsie, put the Member in hot Grains,

Grains, apply Medicines to the original of the Nerve, as well as the part affected; infuse Pyrethum in Brandy.

Outwardly Oils relax too much; use spirit of Ant, Worms, or spirit of Wine, or spirit of *Sal Armoniac*, with decoction of Nettles.

A Palsie is produc'd thro' paucity of Spirits after Evacuations, Venery, loss of Blood, Atrophy, Sadness, and after Chronical Diseases.

The Sense is lost by the obstruction of the Membranes, the motion by the obstruction of the Nerves and Muscles: 'Tis a great Palsie when Sense and Motion are lost, and the Understanding depraved, and the Pulse and Respiration much oppressed.

'Tis of difficult Cure in the Cacochemical, after great Blows in old Men, and the Winter.

Salivation does much good where the Palsie is from inward Causes, not the outward.

The Palsie with an Atrophy, is difficultly cured, but that of particular parts is soon relieved.

Trembling succeeding a Palsie is a good sign, and when the Member grows hotter, and more sensible, or a Fever attends.

A *Paraplegia* is apt to return, and hot Baths occasion the return of the Apoplexy. Take Nettles two handfuls, Salt  $\text{ʒiij}$ . Cum-

R 3

min-

min-feed and Mustard-feed each  $\mathfrak{zj}$  Chamomil flowers three handfuls, boil all in Wine, add Brandy half a pound, Soap  $\mathfrak{ziv}$ . for a Fomentation to a Paralytic part.

Apply Cataplasms to the Feet of Rue, *Ranunculus*, Salt and Soap, anoint the part with Oil of Foxes  $\mathfrak{zij}$ . Oil of Amber and Turpentine each half an ounce, Oil of Marjoram  $\mathfrak{zij}$ .

A difficulty of Speech oft ends in an Apoplexy.

A Palsie of the Tongue is rarely cured in Old People, but use Setons, Issues, Cupping-glasses to the Neck, where the Nerves arise and bleed in both Jugulars, and under the Tongue; there are two methods indicate in the Palsie, as well as Apoplexy.

1. We must respect the Inflammation from fizy Blood, and the Fever which is known by the quick and frequent Pulse, but that ceases after 14 or 20 days. And then

2. We must be directed by the rare, small, slow, languid Pulse, to the use of the hot opening Method to promote the Circulation of Humors, and raise the Pulse.

The Palsy is a loss of Sense or Motion, or both, by compression of the Nerves, or obstruction of its Canals, by viscid Serum, which external Cold thickens. Palsies from great Falls are generally fatal, as well as those where the Sphincters are resolved and relaxed.

C H A P.

## C H A P. XXXIII.

*The Pulse in the Tremor and Palpitation of the Heart is generally languid and convulsive, weak, unequal, sometimes slow, at other times frequent.*

1. **I**N Hypochondriacs, Hysterics, Epilepsies, Scorbutics, the hot windy animal Spirits make a convulsive agitation of the Muscles of the Heart, which is the Palpitation or Tremor.

2. A Tumor in the Heart will irritate, the Pulse is very unequal and inordinate, and this Palpitation is continual, and ends in a *Lypothymia*, or Consumption.

3. If the Palpitation happens thro' Evacuations and loss of Spirits, the Pulse is small and frequent thro' weakness.

If the Palpitation happen thro' Fevers, the Pulse is great, quick and frequent.

By these Observations we may learn this general Rule, When different Causes produce a Disease, the Pulse will differ according to their Causes.

4. When the Palpitation happens thro' suppression of Evacuations, the Pulse will be greater and more frequent.

R 4

5. The



5. The grumous Blood coagulates in the Heart, and is a *Polypus* when the Pulse intermits and is obscure.

6. This Irritation of the Heart happens from Poisons, consumptive Lungs, Water in the *Pericardium*, or Worms, Abscesses, Wounds, Ulcers in the Heart, putrid corrupt Humors in the Stomach, or any other part, as the Womb.

7. Joy, Anger, Fear, Sadness, Heat, hot Baths, Venery, Wine, Fasting, violent Exercise, produce the Fits, by agitating the windy Spirits.

8. A *Plethora*, or a serous Blood, produces a Palpitation; this breeds little and windy Spirits, but the *Plethora* oppresses the Heart.

In this Disease the Circulation is weakly perform'd, and from thence arises the noise in the Ears, melancholic Blood and *Syncope*; the small weak Pulse will not carry on the Blood in a natural celerity and frequency.

The Breath is short, copious, crude Urine, these depend on a Circulation obstructed or slow.

The Cause which irritates the Pulse must be remov'd.

1. The convulsive hot Winds must be cured by Bleeding, Purging, Vomiting, Whey four pound in a Morning for a Month; the cold Winds by Bitters, Acrids, volatile Salts, Chalybeats and Cephalicks, as in the cold

cold Melancholy, especially steel Powders, or tepid Baths.

2. The Circulation must be preserv'd by Cordials, which are the strong Aromatics and Cephalics, Ambergreese, Saffron, Balm in Wine, Thyme distill'd with Sack, oil of Citron, Cinamon mix'd with Balm, Water spirit of Citron, confect. of Alcherms, tinct. of Saffron:

Take the Heart of a Cow slic'd, distil it in Sack, adding Balm, Angelica, Clove-gilliflowers, Thyme, Rosemary.

Apply to the Heart Venice-treacle and Saffron, or oil of Roses one ounce, oil of Citron half a scruple, oil of Cloves and Cinamon of each 6 drops, Musk and Ambergreese of each 4 grains.

Or apply hot Bread dipt in Spirits, or a Bag of Balm, Saffron and Camphire.

Take Venice-treacle half an ounce, Saffron one scruple, Camphire, Bals. Peruv. oil of Amber, of each half a scruple, make a Liniment.

Take *Ammoniacum* two drams, Benjamin, *Gum Guaiacum*, of each one dram, Ambergreese half a dram, Musk one scruple, salt of Wormwood one dram, Balsam Peruv. *q. s.* make Pills.

Apply two Cupping-glasses, one to the Region of the Heart before, and one behind; these help the Circulation, Frictions are good, and drinking Wine, but no Water.  
The

The Palpitation produces Fluxes or a Salivation, Inappetency, Lassitude, Leanness, difficult swallowing, for which hot Bath Waters are good, and the decoction of the Woods; the slow Pulse indicates hot Medicines, the frequent cold, the weak strong Cordials.

This is a dangerous Disease, because it stops the Circulation of Blood; if it oft returns 'tis more dangerous, and most if it be continued; if from a *Polypus* 'tis incurable, but if it depends on Passion, Melancholy or Obstructions, it may be cur'd; if from Poisons, or malignant Fevers, 'tis very dangerous.

They who are subject to the Palpitation young, die suddenly, before their old Age, or fiftieth Year.

Styptics are injurious, and all very hot and very cold Medicines and Diet.

In the Palpitation the Motion of the Heart is violent, in the Tremor frequent and weak.

The violent Convulsion in the Palpitation is from the Obstruction of the Blood-vessels, which irritates a convulsive Motion; in the Tremor the Muscles are affected without an Obstruction, and the Irritation is less; the Pulse in the Fits is *velox creber inordinatus*.

All Convulsive Diseases, tho' they depend on hot Winds, stop the Motion of the Heart

Heart and Circulation, and produce a grumous Blood.

The Obstructions made by the grumous Blood and convulsive Spirits are frequently cur'd, but the Obstructions by bony or stony Concretions in the Arteries are never cur'd, but they may be palliated by Opiats, and frequent Bleeding.

The spasmodic Trepidation of the Muscles, proceeds from the different Action of the two antagonist Muscles, when one moves well and the other twitches.

Or else the Spirits have a restless Motion in Drunkenness, Fear and Anger, by Tobacco, Coffee and Mercurial Medicines, and all the Muscles have a Trepidation in Melancholic Persons,

Or from weak Spirits which cannot hold the Muscles tense, the Pulse is small and the Strength weak.

The Hypochondriac Tremors are cur'd by Chalybeats, volatile Salts, Bitters, Acrids and Aromatic Cephalics.

The Antiparalytics are proper for Trembling from Weakness; for the Convulsive Tremblings use the Anti-convulsives, and in Malignant Fevers Alexipharmics; in Obstructions the proper Specific Tastes.

The Tremor of old Men, or the Hereditary, or from an ill Diet, is never cur'd.

Tre-



Tremor in the Limbs oft degenerates into Palsy, Apoplexy, Lethargy or Convulsion,

Trembling, which succeeds a Palsy, is a sign of voluntary Motion returning.

A Tremor from retention of the *Lochia* is dangerous.

If it succeed a *Delirium* in Fevers, it ends in a Convulsion.

Palpitation in the Muscles is a sign of Convulsions.

To cure the Fits of Palpitation we must divert the hot Flatulencies by Bleeding, Purging, Blisters and volatile Cordials; but when the Fit is over, the Cure is to be directed against the Atrabiliarian Cachochymia, which the frequent Pulse out of the Fit indicates; but in the Fit the Pulse is weak, and indicates hot Medicines, after Revulsions and Evacuations are made by Bleeding.

### *Chorea St. Viti.*

It seizes young Boys and Girls from Ten Years old to Puberty: They are lame, and have a trembling instability in the Hands and Feet; this depends on some sify Humour translated to the Back and Marrow, for which this Method is commended.

Bleed

Bleed twice, and purge every other day three or four times.

Then give the same Cephalics as in the Palsy; and if the Convulsions be much, as in the Epilepsy.

If there be any intermitting Fever with the Convulsion, the *Cortex* is always good after Evacuations.

The Chincough is a Convulsive Motion of the Muscles of the Breast, by the irritation of the *Aspera Arteria*, by a Salso-acid Catarrh, but the Cure of it belongs to the salt Cacochymia, and not to the hot Flatulencies.

Sneezing and Hiccough are Convulsions by irritation from a salt *Serum*; and these I will refer to the saltness of Humors and the Cure of them in Catarrhs.

E

S

B

7

tea

Pu

to

by

tu

fer

ste

A N  
E S S A Y

To make a New

*SPHUGMOLOGIA,*

*By accommodating the Chinese  
and European Observations  
about the PULSE.*

**T**H E *Chinese* and *European* Doctors may agree in this Definition of Physick, That it is an Art which teaches Physicians to know and regulate the Pulse, when it exceeds or is deficient, and to preserve a healthful Pulse.

They must also agree in their *Physiologia*, by treating of the Causes of the Pulse, Natural and Preternatural; and the Tastes and sensible Qualities of the Fluids, their Consistence, Motion, Secretion, and particular  
Cir-



Circulation must be describ'd, as well as the Instruments of the Circulation, Nerves, Arteries, Veins, and Secretory *Viscera*, and Respiratory Organs.

'Tis not necessary, as the *Greeks* and *Chinefe* have done, to describe the Elements of Fire, Water, Air; but 'tis sufficient for a Physician to observe the mix'd Body out of which Chyle is made, *viz.* the Serum, sour Acid, the oleous Butter and caseous Viscid Parts, all which are evident in Milk; and the Principles of Blood are the same, *viz.* salt Serum, fibrous viscid Parts, and the red oleous *Bullula*, and the vitriolic Acids.

They will easily admit the same Notion of Temperament, That it is a prevailing Quality of the secretitious Humors, *viz.* of Choler, salt Serum, phlegmatic *Lymphas*, or vitriolic Acidity.

The *Calidum Innotum* of the *Greeks*, and the *Calor Primogenius* of the *Chinefe*, is the Animal Spirits, which by the help of different Organs, produces all the Natural, Vital and Animal Actions.

All the Natural Actions are Mechanical, and depend on the Circulatory Motion, as the Digestion and Distribution of Chyle, and its Sanguification and Secretion.

The different Rarefaction of the Blood, and its Qualities, regulate the Circulation and Respiration, and the Mass of Blood is only Chyle sanguify'd, and re-mix'd with its own Secretions.

All

All Animal Actions depend on the Impulse of the external Objects, and are Necessary and Mechanical; such are all sensible Idea's, and many natural Passions, and Memory, and Imagination; but if our Circulation moves quick, all the Animal Actions are furious and precipitate, and violent; but if too slow, dull and stupid: Thus these Actions depend on the Circulation.

Not only the *Contenta* and *Continentia* must be describ'd, but also the *Impetum facientiam*, whose Effects are sensible, though their Substance is not.

The Solid Parts of the Body arise from the Nerves and Membranes, and are vascular, containing particular Humors.

All Parties will agree in their *Semeiotica*, because the Signs of Diseases, and their Causes, may be taken from the Pulse, and also the Part affected, if we adapt the *Chinese* places of their six Pulse, into this new *Sphugmologia*; and with the *Chinese* we may view all sensible Qualities in the Skin, and evident Actions alter'd to confirm our Judgments by the Pulse.

The great Excellency of the *Chinese* Art is, That they can by feeling of the Pulse, discern the Part affected; but the *Europeans* are forc'd to inquire after it by its Qualities, Actions or Excretions. I cannot but particularly esteem the *Chinese* Art, because they have discover'd by their Touch more  
S
than

than any *European* ; and upon that they built their best Observations, *viz.*

That the Pulse in the Left Arm is greater and stronger than in the Right, the reason of which I find is, because the Artery in the Right rises higher from the *Aorta*, near the right Carotid Artery, and in the Left from the *Aorta* directly against the Course of Blood, flowing from the left Ventricle of the Heart.

*Higmore* has this Observation, *Pulsus vehementia & magnitudo in carpo dextro, tam perfecte inquiri nequeant* ; which he imputes to the rise of that Subclavian Artery.

The Pulse in both Arms is equal, as to Celerity and Frequency, and differs only in Strength and Greatness.

Into the Left there is a great stream of Blood injected, and with a greater force ; and hence it is, that such Diseases depend on the greatness and strength of the Pulse, must appear most in the Left Arm, as Fevers, Inflammations, Pains, Defluxions, and these I always observe in the second place of the Left Arm, under the second Finger.

In the Pulse of each Arm there are different Appearances to any one who touches them with three Fingers, occasion'd by the different situation of the Arteries, and the different quantity of Blood injected, and by the different force or *ictus* of the Blood injected.

In

In the first place of the Left Arm which is above the Bone, and under the first Finger, the Artery rises up into the Hand, and it lies something hollow from the Bone; and this makes the Pulse appear like the flowing of Water violently from a Pipe, which the *Chinese* call exundant, and the *Europeans* great and vehement; and in this first place the Blood meets with some resistance, by its rising into the Hand, and being near the Extremities of its Conical Circuit, which gives it a check in its Motion, and that makes it appear greater; so in an Obstruction by an Inflammation, the Artery appears to throb by a great and vehement Pulse.

That a stop in the Pulse makes it more evident, we may easily prove, by stopping the Pulse in the first place by the Finger, and then 'tis most evident in the middle; and if it be stop'd in the middle, 'tis most evident under the third Finger, or third place: The Blood meets with a resistance as it passes into the Capillary Arteries, which makes the Pulse appear higher or lower in the Arm, according to the different forces of the Heart.

In the second Place of the Left Arm, under the second Finger, plac'd below the Bone of the Wrist, the Artery lies streight along the Bone, and appears when prest by the Finger, *chorda tensa similis*, or long and small; and in this Pulse the Blood is a lit-



tle stop'd by the Bone on the Wrist, which makes this Pulse more evident, as well as by its reverberation from the Bone.

In the third Place the Artery lies lower than in the rest, and more cover'd by the Muscles from the third Finger, and has no check or stop to raise it, and this makes that Pulse to appear *Profundus*, small and low.

'Tis certain the Blood comes to this third Place with more force than to the other, because 'tis nearer to the Heart, but it wants a reverberating stop to make it more evident, and appear greater.

There is the same situation of the Artery in the Right Arm, and the same three Places must be observ'd for the Pulse; but since the Blood is injected with less force, and in less quantity, the several places of the Pulse in the right Arm must differ in their Appearances to the Touch, from those in the left, and each place will differ in degree of greatness.

In the first place of the Pulse in the right, under the first Finger, above the Bone, the Pulse will appear less exundant, or as the *Chinese* call it, *Natans*, like the swimming of Wood in Water, or a Feather in the Air, and this the *Europeans* may call undous, or great and soft.

In the second place below the Bone, and under the second Finger, the Pulse appears remiss, not so tense as a Chordee, nor so strong and high, this is long and soft. In

In the third place, under the third Finger, the Pulse is *Profundus*, or small and low, as in the Left Arm.

By an exceeding Circulation all the several Pulses in both Arms will appear greater, and quicker, and more frequent; by a deficient Circulation all the mention'd Pulses in both Arms most appear smaller, more rare, and slow, and the exceeding Pulse will appear most evidently in the Left, and the deficient in the Right Arm.

In an exceeding Circulation the great Heat stimulates the Heart to a violent Contraction, which carries the Blood to the first place; in a deficient Circulation the *Stimulus* is less, and carries the Blood no farther than the middle place, with sufficient force to produce that Pulse, or else in a lower degree to the lowest place, so as to make the Pulse most evident there, and but little in the upper places.

By the five Pulses abovemention'd the *Chinese* observe the place affected by a great, moderate or small Circulation.

*Note*, That in the place of both Arms which is against the high Bone of the Wrist, the Pulse appears most evidently, and in the Left shews the greatest heat of the Liver, and in the Right the Temper of the Stomach, according to the *Chinese*.

1. The general Circulation runs thro' the *Aorta*, and returns by the *Cava*, for these are the greatest Channels of the Blood, and this Circulation the *Chinese* call the *Via Hepatis*, because they believ'd as the Old *Europeans* did, that the Blood was made by the Liver, and that by the Liver they understand the Blood, is plain by the Diseases of the Blood they mention in the *Via Hepatis*, and they say that the Pulse of the Liver which they call *chorda tensa similis* and *longus*, is most evident in the Spring; when the *Europeans* confess that the Blood abounds, and here must be plac'd the Pulse of the *Sanguine Constitutions*, which, according to the *Europeans*, is great and full.

In this middle place of the left, we must look for all the exceeding and deficient Pulses in Diseases of the Blood in its great Canals; such are *Plethora's*, the *Cacochymia's*, obstructions in those Vessels, or *Hamorrhages* from them, and all the Feverish Effervescences, Pains, Inflammations, or defluxion of Humors: See the *Table of Diseases in the general Circulation, or the Via Hepatis*.

Besides the general Circulation, there are four more considerable ones relating to the other places of the Pulses above-mentioned.

The first is in the *Via Cordis*, whose Pulse in Health is the exundous, or great and vehement Pulse according to the *Europeans*, in the place above the Bone of the left, the *Chinese* say this Pulse appears most evidently in Summer, by which we know that this Pulse is a sign of a Choleric Cacochymia, which is produc'd by that Season; the *Chinese* observe the Face to be florid, and the Humors bitter, which are the stimulus of this Circulation that is made thro' the Arteries and Veins of the Head, for with reason I call it the Cephalic Circulation; and the Diseases of the Head, Eyes, Ears, Throat, and Mouth, must be discovered in the place of this Pulse; but this Cephalic Circulation is well and healthful, as long as that Pulse is only exundant, but if it succeeds or is deficient, or moves unequally, we may know it by the Pulses of the same nature.

The reason why the first place of the Pulse in the left Arm shews the disorders of the Cephalack Circulation is, because this Pulse requires the greatest force of the Heart to produce it; and the same force is necessary to carry the Blood upwards into the Head.

The Blood ordinarily, in Health, is carry'd equally into all the places of the Body, and thro' all the particular Circulations alike, but in many Diseases it runs more up-  
S 4
wards,



wards, or to one part more than another ; the reason of which is because the Blood is stoppt or check'd by external Accidents, or some inward Causes, as its siziness or grumosity from descending by the *Aorta*, and then 'tis necessitated to regurgitate thro' the Cephalic Circulation, being stopped in particular Places; the Blood is gathered too much in the Head, and produces either Inflammations in the external or internal Parts, or else the constriction of the Nerves stops it as in Convulsions, or Passions, determin its motion that way as in most Deliriums ; or a critical ebullition of Blood transmits some Humor from the general Circulation, as in malignant Fevers, and the same may be the causes of the other particular Circulations being disorder'd; and external Heat and Pain were always observ'd to draw Humors to any part. And 'tis observ'd that the most volatile and aerial light Meats and Drinks and Medicines, have a tendency to the Head, because of the lightness of their Particles, and by their exundant Pulse joined with quickness and frequency. The *Chinese* discover many Diseases of the Head, as is evident by the Cephalic Diseases mentioned in the *Via Cordis*.

The deficient Pulses in the Cephalic Circulation are produc'd when the Blood is diverted to any other Circulation, so Purges divert it into the Belly, Bleeding draws the

the Blood into the great Canals of the general Circulation, and especially bleeding in the Feet, Ligatures detain the circulating Blood in the Limbs, Blisters by the pain, and Cupping with Scarifications, determine its motion to other parts. External Cold checks the Defluxion into any part, and repels the Circulation that way. Evacuations of Blood by the *Menses* or *Piles*, obstruction in the *Carotid* Artery, or Aneurisma, compression by Tumors, or paralytic Resolution in the Nerves, hinder the flux of the Blood to the Head.

The second particular Circulation is thro' the *Thoracic Arteries* and *Veins*, and the Arms must be reckoned into this Circulation, and that part of the *Medulla Oblongata* which receives Vessels from the *Thorax*; this the *Chineses* call their *Via Pulmonum*, and say, That in Health the Pulse is natans, and this is evident in *Autumn*; and the secretory Humor which is the *stimulus* of that Circulation, is the salt *Serum* of the *Lymphatics*, or the *Vitriolic Acidity* or both, which abound in that Season. The *Chinese* attribute an adust and acrid Humor to the Lungs, and a paler Colour is visible in the Face.

The third particular Circulation is thro' the *Celiac Arteries*, and the *Parta*, and when this Circulation is healthful we find the Pulse in the middle place of the right Arm  
*remissus*

*remissus*, that is less full and soft, and in this place we must observe those Diseases which happen in this Circulation thro' the Hypochondriac Vessels, as those of the Stomach, Spleen, Mesentery, Liver. The *Chinese* say the remiss Pulse happens 18 Days. at the latter end of each Season; the Taste relating to the Stomach they say is sweet, and the Colour in the Face is yellowish. In the *Thri* Pulse we must observe the Phlegmatic Tempers and Diseases, and in the second Circulation above-mentioned, the salt Temper and salt Cacochymia.

The fourth Circulation is thro' the *Emulgent Arteries* and *Veins*, and also the *Iliac*, and *Uterine* or *Seminal Vessels*, and habit of the Body and lower Parts. This the *Chinese* call *Via Vesicae*, when this Circulation is natural the Pulse is *profundus*, and this is the Pulse most observable in the Winter; when the crude *Serum* is said to prevail, and this Pulse is esteemed the place of Cold, and of the Diseases of the *Kidneys*, *Ureters*, *Genitals*, and the saltish Taste is appropriated to the *Vesica*, and is in the third place of the right Arm, in which place the *Porta Vita* is *crebro acutus*, as the *Chinese* assert.

Since the force of the Heart may be compared to that of a Pump, I can thereby sufficiently explain the differences of the Pulse, and the several Circulations called by the *Chi*.

*Chinese Via Hepatis, Cordis, Pulmonum, Stomachi, Vesicae.*

1. If the Pump be mov'd with great force, and the Stream observed that is pumped forth, it will appear exndant, or great and vehement.

2. If the Pump be moved with a little less force, the Stream coming forth will appear undous or natant.

3. If the Pump be moved with a moderate force, the Stream will appear only full, 'tis in the Pulse *Chorda, Tensa, Similis*, which is caused by a temperate Heat, as in *Sanguine Tempers*, and the Spring.

4. If the Pump be moved with a force deficient, or less than moderate, the Water will flow out with a less Stream, suppose three quarters full, and this in the Artery will make a remis Pulse, or less great and soft.

5. If the Pump be moved with the least force the Stream will come forth very small and slow, and such in the Artery produces the Pulses *profundus*.

These several Streams and Ictus being considered, they will describe to us the several natural Circulations; and by the addition of the great, quick and frequent, in the hot *Cacochymia's*, or by the small, slow, rare, in the cold *Cacochymia's*. In the first force we may discern the Choleric *Cacochymia's* and Diseases whose Pulses are vehement,



hement, great and strong. By the second force we understand the salt *Cacochymia's* and Diseases whose Pulses are in a degree less great and vehement.

By the third force we may understand the Circulation in Sanguine Tempers, which is moderately great and strong.

By the fourth force we may apprehend the Phlegmatic Circulation, whose Pulse are small and soft.

By the fifth force we may discern the ferous Circulation, whose Pulses are most small and soft.

These several Streams and Ictus the *Chinese* discern in the six places of the Pulse, and to each they appropriate *Particula Via* or Circulations, and in them observe the Diseases of those *Via*.

---

*The Chinese Pulses compar'd with the European.*

These are the exceeding Pulses by which we may know an exceeding Circulation in all the *Via* and particular Circulations, as well as the general; these Pulses the *Chinese* say indicate Heat and Wind.

*The Chinese Pulses.*

*The European.*

- |                                                                                                        |                                   |
|--------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1. The exundant Pulse which Indicates Heat, and pain in the Head, Belly, Feet, in their proper places. | Great, vehement.                  |
| 2. <i>Chorda, Tensa, Similis, Thri</i> , respects the Blood and Spirits, which circulate together.     | Great or long, and High.          |
| 3. <i>Plenus</i> indicates oppression of the Heart, or obstruction of the Blood, and Pain.             | The hard Pulse, and full.         |
| 4. <i>Intensus</i> indicates Wind, and Pain, <i>Delirium</i> .                                         | Great, quick Pulse, and frequent. |
|                                                                                                        | 5. <i>Na-</i>                     |

5. *Natans* indicates Undous.  
Wind in the  
Lungs.
6. *Plenus* in *extremis* The great, soft, as  
in *medio vacuus*, In- in a *Peripneumo-*  
dicates Flux of *nia*.  
Blood and empti-  
ness.
7. *Acutus* Indicates High Pulse.  
a Disease in the  
Mind.
8. *Crebro Acutus* In- High and frequent.  
dicates Vomiting,  
or Nausea's and  
Heat.

These are the deficient Pulses by which we know the small and slow Circulation of Humors, these Indicate Cold according to the *Chinese*, and Wind.

1. *Profundus* Indi- Low Pulse.  
cates cool Spirits,  
cold in the Extre-  
mities.
2. *Parvus* Indicates Small.  
Coldness, flux of  
Blood, and Sad-  
ness from excess of  
Serosity.
3. *Remissus* is com- Small and slow.  
pounded of small,

and

and flow, Indicates  
heat of the Sto-  
mach, or putrid  
Tepor, cool Spi-  
rits.

4. *Obtuse rarus* Indi- Rare and flow.  
cates a Disease from  
defect of Blood and  
corruption of it.
5. *Tardus* Indicates Slow.  
cold Spirits.
6. *Cadens* Indicates Very low, oppressed.  
poysonous Spirits.
7. *Mollis Subtilis* Indi- Small, soft.  
cates coldness in  
the lower Parts.
8. *Debilis* Indicates Weak.  
windy Spirits.

I cannot but observe that 'tis a defect in the Account of the *Chinese* Pulses, that no Author has yet describ'd their Pulse in all Diseases, but I have collected what I could out of *Cleyer's* Account ; and I must farther observe, that the *Europeans* have not yet fully describ'd the Pulses in all Diseases, and the alterations of them by different Causes and Symptoms, as well as the numbers of the Pulse.

I must further observe, that the *Chinese* oft break their own Rules, when they take the Pulses in one Circulation to indicate  
Di-



Diseases in a different; but the proper Pulses of Diseases ought to be found in the place relating to that circulation, as to the manner of the circulation and their twelve ways of the *Calor Primogenius*, and *humidum Radicale*, (which is a fantastical Description of the Veins and Arteries, and their branches, to explain their circulation) and the enmity and friendship of the Pulses to one another; I take them to be a curious absurdity.

The great perfection of the *Chinese-Art*, is to find out the place affected. This they have ingeniously attempted, tho' for want of Anatomy they have writ obscurely.

*Galen* boasts in his Book *De Dignoscendi Pulsibus*, chap. 2. That he and his Disciples oft told the part affected by the Pulse, before they look'd on it, and the Causes which preceeded, and the present Symptoms. This is the great glory of this Art, and that Physician who can attain it by his diligence in feeling the Pulse, will be most admired, and confided in by his Patients, because he can discover the part affected, the antecedent Causes, and the external vicious Regimen, without inquiring any thing.

The best Method I know is that mixed of the *European* and *Chinese*, which is thus.

The

The Arteries of the Body may be divided into the trunk of the *Aorta*, and also into its ascending, or descending Branches.

The Pulse Arteries are to be reckoned among the ascending Branches, because they rise from the *Subclavians*.

The right *Carotis* arises with the *Subclavian* from the *Aorta*, and is united for a small space with it: The left *Subclavian* Artery is coupled to the Cervical Artery, and less in the Diameter than the other; the right *Subclavian* is larger, and rising higher goes a more direct way to the right Arm, the left is the less, and rising longer, ascends more obliquely towards the left Arm.

Besides the *Subclavians* the *Carotid* and *Cervical* Arteries, must be reckoned among the ascending Branches; and since the *Intercostal*, which is called *Superior*, arises from the *Subclavian*, as well as the *Mammaria*, &c. these also must be reckoned among the ascending Branches.

Since the Pulse-Arteries arises betwixt the Cephalic and Thoracic circulations, they must discover when the Blood runs too fast or slow into either of them.

But that Pulse-Artery which is nearest to the great course of Blood thro' the *Aorta*, and arises betwixt the ascending and descending branches of the *Aorta*, will will best discover the general Circulation thro' the *Aorta*, as the left *Subclavian* which

T

goes

goes to that Pulse in the left Arm; as there are two circulations in the Branches above the *Aorta*, so there are two circulations in the lower Branches, the one in the *Celiac*, and the other thro' the *Renal* and *Iliac* Arteries, and the *Spermatic* and *Uterine*.

The Diseases in these several Circulations are thus discovered by the Pulse in the Wrist.

If the Blood circulates too fast thro' the Arteries in general, and the trunk the *Aorta*, then the Blood is projected farther in all the Arteries, and consequently in that of the Wrist, and the Pulse will appear very exundant above the middle place of the Pulse; but if the general circulation runs too slow, it will appear most below the middle place of the Pulse, since in perfect Health the Pulse appears most in the middle place in the left Arm: And in this manner we must first discover the general state of the circulation, and the antecedent Causes of Diseases, which are mentioned in the *Via Hepatis*, and we must count the numbers of this Pulse to discern whether the Disease is produc'd by exceeding or deficient Pulses, or whether the Blood be rarified or condensed, or have hot or cold *Cachymia's*; but by the four other Circulations we must discern where the *Cachochymia* fixes.

'Tis not my particular Fancy to examine the Pulse in the left Arm first, but *Highmore* in his *Anatomy*, pag. 164. *Ex qua Arteria divaricatione pulsus in carpo sinistro esse examinandum*

*minandum censeo, quia fideliter magis & citius cordis statum ac conditionem enarrat, quam Arteria dextri carpi, quia immediate sanguinis appulsum a corde sentit. & tactui ad carpum non adeo divisum ac fractum reddit.*

If the descending trunk of the *Aorta* be compress'd, a greater quantity of Blood passes into the *Carotides* and *Thoracic Arteries*, as after full Meals and in the Dropfie, and then also a greater quantity passes into the Arteries of the Pulse, and makes the Pulse greater above the middle place of the left and right Arm.

But if the descending trunk be too much dilated, the great quantity runs into the two lower Circulations, and then the Pulse appears *remissus* in the middle of the right, or *profundus* in the lowest place, and then the Blood is deficient in the upper circulations, and the Pulses in the upper place of the Pulse deficient.

If the protrusion of Blood be stopt in the *Carotid Arteries*, it will flow more into the *Thoracic* and Pulse-Arteries, as appears in Lethargies; and if the Blood be obstructed in the *Thoracic* Circulation, it will run more into the Head and Arms, as in *Pleurisies*.

The reflux from the Head is stopt in a *Dyspnea*, Tumors of the Neck, Convulsions, and Tumors of the *Viscera* stop both the efflux and reflux of the Blood, and divert it into the next Arteries.

Where



Where the parts are most altered, there the Pulse of each Circulation appears preternatural, and we may know it by our own Pulses, as well as the *Chinese* Names.

---

## T A B. I.

Containing the *Europæan* and *Chinese* Pulses in the Diseases of the general Circulation, or *Via Hepatis*, in the middle of the left Arm.

Refer these Diseases to the exceeding Pulses.

*Europæan Pulses. Chinese Pulses.*

*Plethora.* Great, and full, *Chorde, tense, si-*  
and slow, 75 *milis*, in 3 places,  
Pulses in a mi- or *Pleni magni*  
nute. *exundantes, fre-*  
*quentes, intensi.*

The hot Quick, frequent, *Crebro acutus, or*  
*Cacochy-* great, above 75 frequent in three  
*mia's or* Pulses. places, or *exun-*  
great heat. *dans magnis.*

*Ephamera.* Great, quick, Great, exun-  
frequent, equal, dant, quick, or  
100 in a mi- *Intensus.*  
nute.

Putrid

## European Pulses. Chinese Pulses.

|                    |                                                     |                                                                                                                |
|--------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Putrid Fevers.     | Great, quick, frequent, unequal, Pulses 100.        | <i>Exundantes</i> , or <i>Celeres</i> , or <i>Chorda</i> , <i>Tensa</i> , <i>Similis</i> , <i>frequentes</i> . |
| Burning Fevers.    | Most vehement quick, frequent, above 100 Pulse.     | <i>Exundans magnus</i> .                                                                                       |
| Tertian.           | Vehement, great, quick, frequent, equal, 100 Pulse. | <i>Intensus</i> , <i>Ple-nus</i> , or <i>Chorda</i> , <i>Tensa</i> , <i>Similis</i> , in 3 places.             |
| Quartan.           | More slow and rare, with some inequality.           |                                                                                                                |
| Quotidian          | Lesser, slower, and more rare than the other Agues. |                                                                                                                |
| Hætic.             | Small, weak, quick, frequent, above 100.            |                                                                                                                |
| Malig-nant Fe-ver. | Small, languid, unequal and frequent.               | <i>Subtilis</i> , <i>profundus</i> , or <i>natans creber</i> .                                                 |
| Plague.            | Weak, small, unequal, quick and frequent.           |                                                                                                                |

## Europæan Pulses. Chinese Pulses.

*Small Pox.* Small, quick, frequent, unequal. Quick and profound, or the Pulse of the Liver, quick and profound in the third place of the Pulse.

*Hæmorrhages.* Frequent, undous, with a vibration. *Plenus in extremi in medio vacuus.*

*Inflammations in general.* Great, vehement, quick, frequent, hard and ferrine. The *Profundus subtilis* is good, *Natans magnus* is dangerous.

*Schirrus in general.* Small, hard, quick, frequent.

*Pains in general.* Great, vehement, quick, frequent,

*A great Bruise.* Great, quick, frequent; from *Platerus*.

*Defluations.* Great, quick, frequent, 90 or 100 Pulses.

*Intermitting Fever with loss of Appetite.*

*Inaqualis magnus, parvus remissus, frequens.*

*Scurvy.*

## Europæan Pulses. Chinese Pulses.

*Scurvy.*Great and hard  
or small, weak,  
frequent, formi-  
cant, unequal.Suffocat-  
ing Ca-*tarrhs*from coa-  
gulateBlood in  
the Lungs*Gibbosity.*Quick, fre-  
quent, unequal,  
or rare and weak  
and slow, from  
*Etmuller.*Makes the  
Pulse quicker.Obstru-  
ctions.Great, quick,  
and frequent, in  
the Old *Tri*, in-  
termittent, or  
unequal, great,  
and small, strong  
and weak.*Plenus.**Elephan-  
tiasis.*Frequent,  
weak, small, slow  
when cold.

In



## Europæan Pulses. Chinese Pulses.

In a pain The Pulse in  
 of the that Arm great,  
 right quick, frequent,  
 Shoulder, hard, ferrine, be-  
 with an twixt 80 and 90  
 Inflam- Pulses in a mi-  
 mation on nute. In exces-  
 the Back five Pain the  
 and Breast Pulse was *pro-*  
*fundus* or op-  
 pressed.

*Note,* That the *Serrine* Pulse appear'd to me like a little Rivulct or Stream, which runs, and is reverberated in the Artery when the rest of the Blood is stagnant. So we observe a River to run on one side, and stagnate on the other.

*Note,* That the Pulse in the left Arm appeared, little altered, by which I observ'd that the Fever was a symptom of the Inflammation in the right Arm.

There is no Disease in the *Via Hepatis*, if the Pulse be *mollis chorda tensæ similis*.

This Pulse in the *Via Hepatis* sometimes exceeds the middle place and goes above the Bone, and then indicates obscurity in the Eyes, heaviness in the Head, and pain in the Nerves.

I have oft observed the Pulse to be most evident near the Bone, and above it, and little in the Cavity below the Bone, and there we must observe the general state of Blood.

*These Diseases must be referred to the deficient Pulses or unequal.*

*Europeans.*

*Chinese.*

Want of Small, flow, *Raro obtusus.*  
Blood and empty, soft.

Spirits.

Cold Ca- Small, flow, *Tardus debilis.*  
cochymia rare, or languid,  
or Cache- small, frequent,  
xies. from *Aritæus.*

Profuse Languid, flow, The Pulse of  
*Hæmor-* vermiculous if the Liver or  
*rhages* in Feverish, small, Heart *profundus*  
general. quick, frequent. *rarus.*

In great Unequal, or not  
*Aneurisms* perceptible, or  
of the Ves- small.  
fels.

When the Small, Inter-  
*Pericardi-* mitting.  
*um* grows  
to the  
Heart.

*Poly-*

*Polypus.* Intermittent,  
vibrating; ob-  
scure.

*Varices.* Languid defi-  
cient.

Water in Small, soft.

the *Peri-*  
*cardium.*

Small  
strength,  
trouble in  
the Head,  
noise in  
the Ears,  
coldness  
of Extre-  
mities.

The *Pulsus va-*  
*cui debiles, sub-*  
*tiles, molles, tar-*  
*di.*

*These Chinese Pulses in this Circulation indi-*  
*cate some Diseases or Symptoms in the other,*  
*because if the Blood runs much into one Cir-*  
*culation, it will be deficient in the rest, and*  
*e contra, and the Diseases of the Nerves*  
*belong to the Cephalic Circulation.*

*Intensus.* Affliction in  
the Nerves.

*Sub-*

*Subtilis* Pains in the  
*natans* Nerves, heavi-  
*magnus* ness in the Head,  
*Plenus.* red Eyes, obscu-  
 rity in them.

*Parvus* Dispersed Spi-  
*debilis na-* rits, obscurity of  
*tans.* the Eyes.

*Valde na-* Weak Nerves,  
*tans.* without strength  
 Palsie.

We must first take the numbers of the Pulse in this Circulation to find by the Pulse in the middle place of the left Arm, whether it exceeds or is deficient : For Example, I find by that Pulse in the left Arm, examined by the Pulse-Watch, in an *Asthma*, that the Pulse runs about 95 in a minute, by which I know that some hot *Cacochymia* produces that Disease, and some feverish Ebullitions of Blood ; but the part affected must be discovered in the right Arm in the first place, where the Pulse is *natant*, unequal, frequent, which is the Pulse in the *Thoracic* Circulation, in the *Asthma* among the exceeding Pulses.

Thus we discover the antecedent Causes of all Diseases in this middle place of the left Arm, and for this end a Pulse-Watch is  
 neces-



necessary to count the exceeding or deficient numbers, and by the quick exundant Pulse in the first place of the left Arm, we may discern the Head-ach attending the *Asthma*: The Diseases fixed in that place, which has the most preternatural Pulse respecting one of the four particular Circulations, and we must often feel the six places of the Pulse that we may know them in Health, and the Pulses which are preternaturally changed by Diseases.

The Blood runs with an equal pressure into all parts alike in Health, but the greatness and vehemence of that motion is best perceiv'd in the left Arm in Health, because the left *Subclavian* arises directly against the stream of Blood, as I first observ'd in Mr. *Comper's* Arteries fill'd with Wax, and have since met with the same remark in *Highmore's* Anatomy, and when the Blood moves too fast or slow in Diseases, we may observe those alterations best in the middle place of the Pulse of the left Arm.

'Tis probable that we had the first Notion of the Circulation by the *Venetian* Merchants from *China*, and I have taken these obscure hints from *Cleyer* to improve this Art.

## T A B. II.

Containing the first particular Circulation thro' the Head, which is called the Cephalic, or Via Cordis, in the first place of the Pulse in the left Arm.

*These Diseases depend on exceeding Pulses:*

*The European Pulses.**The Chinese:*

Head-ach Great, quick, from In- frequent. flamma- tion or Fever.

Frequent in three places, or *celerrimus*, or *chorde, tensa similis*; the *brevis rarus* is fatal.

Windy The same Pul- Head-ach, ses but lesser. Head-ach and Vo- miting. *Mania.*

*Natans celer frequens.*

Small, hard, quick, frequent, convulsively moved.

*Natans, exundans, longus, the plenus trahentri instar* is hopeful, but *parvus profundus subtilis* fatal.

*The*

*The European Pulses.**Chinese Pulses.*

*Delirium* The same Pul- *Intensus*, fre-  
 from *atra* fes. *quens*, *chorda*,  
*bilis*, or *tense*, *similis*.  
*Melan-*  
*cholick*  
*Fears.*

*Phrenitis.* Small, hard, *Magnus*, *durus*,  
 quick, frequent, *celer*, *creber*.  
 unequally mov-  
 ed, trembling.

*Convul-* Vehement, *Exundant*, great  
*sions.* great, tense, and and full.  
 convulsively  
 moved, or quick,  
 frequent, inor-  
 dinate.

*Giddiness* Small, unequal, *Intensus* *celer-*  
 frequent, or rare *rimus*.  
 Intermitting.

*Epilepsia.* Unequal, tense,  
 less, rare, slow,  
 or frequent.

*Catalepsis.* Great, rare,  
 slow, tense, hard.

*Lethargies* Great, weak,  
 soft, or undous,  
 slow, rare, une-  
 qual *dicrotis*, *in-*  
*termittens*, I  
 counted 74 Pul-  
 ses in a minute.

Som-

*European Pulses.**Chinese Pulses.*

*Somnolentia.* In all *Sopors* the Pulse is undous.

*Apoplexy.* The same as in Fevers, quick, frequent, and *magnus plenus*.

*Hemiplegia.* *Magnus rarus*.

Want of sleep.

*Garrulity.*

*Plenus magnus crebro acutus.*

*Catarrh.* Quick; frequent

*Quinsy.* Great, undous, if quick, and frequent very much, it tends to a *Peripneumonia*, if very tense to *Convulsions*.

*Natans, plenus.*

Thirst, dryness in the Nose and Throat.

*Magnus celer* Life, *vacuus parvus* Death, or *plenus magnus crebro acutus*.

Red-



*European Pulses.**Chinese Pulses.*

Redness  
in the  
Face and  
Wind,  
much  
heat.  
Disease in  
the Mind.

*Plenus magnus.*

Pain in  
the shoul-  
ders.  
Malig-  
nant Fe-  
ver.  
Too  
much  
sweat.

*Pulsus multum  
acutus, or a high  
Pulse.*

*Profundus &  
creber.*

*Natans magnus,  
rarus.*

*Profundi mag-  
ni molles.*

*Note,* That the Pulse in the *Via Cordis* does sometimes reach or extend it self into the second place of the Pulse, and then it Indicates pain of the Heart, driness, redness of the Face and Head, very much, and Vomiting.

*These*

*These Diseases depend on the deficient Pulses;  
or the unequal.*

*Europæan Pulses.*

*The Chinese.*

*Hydrophobia.* Small, unequal,  
convulsive.

*Hysterical Fits.* Small, weak,  
rare or frequent,  
inordinate, con-  
vulsive, defi-  
cient.

*Palsie.* Small, weak,  
slow, in some  
rare, in others  
frequent, inordi-  
nate, intermit-  
ting.

*Melancholia Hypochondriac.* Small, slow, *Parvus tardus;*  
weak, frequent, but hard of Cure  
if from affections if *exundans mag-*  
small, unequal. *nus.*

*Great Apoplexy or Carus or Coma.* Rare, weak,  
or small, intermit-  
ting, slow.

*In great Convulsions.* Languid, rare,  
less tense.

*Very Natant;*

*Euro-*

*Palpitation.*

Convulsive or vehement, unequal in rarity and frequency, greatness and finalness.

*Tremor cordis.*

Less, frequent, trembling.

*Hypothymia.*

Small, weak, obscure, unequal frequent or rare.

Weak spirits, little strength, with coldness, vacuity, fear obscurity in the Eyes.

Small and weak slow and rare.

Small, weak, natant, or raro obtusus.

Pain in the Heart or Head by Cold, troubled sleep.

*Profundus intensus;*

## European Pulses.

## The Chinese?

Pain of  
the Head  
and  
Cough,  
much heat  
in the  
Breast.  
*Dropſy* in  
the Head.  
*Incubus*.

*Parvus debilis,  
mollis subtilis.*

The Pulse of *Cadens*, or *raro*  
Fear, small, slow, *obtusus*, in the  
languid, une- third place.  
qual, intermit-  
ting.

These are the *Chinese* Pulses in the Cepha-  
lic Circulation or *Via Cordis*, and they  
indicate some Symptoms, Diseases in  
other particular Circulations.

## Chinese Pulse.

## European Pulses.

*Chorda tensa similis.*

Defect of the Heart  
downwards, affli-  
ction in the Loins,  
defect of *Menstrua*  
*Pustules* in the  
Breast.



## Chinese Pulse.

## European Pulses.

|                                                       |                                                        |
|-------------------------------------------------------|--------------------------------------------------------|
| <i>Intensus.</i>                                      | Pain in the Belly.                                     |
| <i>Remissus.</i>                                      | Horror in the Skin.                                    |
| <i>Parvus.</i>                                        | Cold in the Breast.                                    |
| <i>Magnus ad nistar mal-<br/>brum persicorum.</i>     | Pain in the Feet.                                      |
| <i>Frequentes.</i>                                    | Heat in the orifice of<br>the Stomach.                 |
| <i>Si idem locus non per-<br/>vaditur a Pulsibus.</i> | Pain in the Loins and<br>Nerves, wind in<br>the Belly. |
| <i>Crebro acutus.</i>                                 | Much repletion.                                        |
| <i>Natans &amp; vacuus.</i>                           | Flux of the Belly.                                     |
| <i>Raro obtusus.</i>                                  | Obstruction in the<br>sides, weak Spirits.             |
| <i>Profundus.</i>                                     | Pain of the Shoul-<br>ders.                            |
| <i>Celerrimus.</i>                                    | Pain in the Intestines<br>by their obstru-<br>ction.   |
| <i>Exundans.</i>                                      | Heat in the Breast.                                    |
| <i>Profundus.</i>                                     | Water in the Breast.                                   |
| <i>Tardus.</i>                                        | A Malignant Fever.                                     |
| <i>Plenus.</i>                                        | Difficult Urine.                                       |
| <i>Remissus &amp; languidus.</i>                      | Repletion in the Sto-<br>mach.                         |
| <i>Vacuus &amp; debilis.</i>                          | Weak Spirits.                                          |

The Cephalic Circulation provides Spirits for the motion of Heart, Lungs, Stomach, Guts, &c. the *Thorax* helps the Celiac Circulation by its continual motion, and if the Blood flows into one Circulation, it will be deficient in the next. This may be some reason of the *Chinese* Observations of some Diseases by the Pulse in a different Circulation, and the *Chinese* call the *parva Intestina* the *Cordis Intestinum*, since the Cephalic Circulation; is above the *Arteries* of the Arms, and the Celiac near an equal distance below it. Some Diseases may make the same Pulses in both Circulations, and when the Blood runs upwards, it must be deficient downwards, & e contra.

---

## T A B. III.

Containing the Diseases and Pulses in the second particular Circulation, which I call the Thoracick, or Via Pulmonum, in the first Place in the Right Arm.

*These Diseases depend on exceeding Pulses.*

*European Pulses.*

*Chinese.*

Hot Wind in the Lungs,

*Valde celer.*

Cough Great, quick, *Intensus, profan-*  
and Chin- frequent, *une-*  
cough. qual, in Chil- *cus, crebro, acu-*  
dren the Pulses *tus.*  
above 100, in a-  
dult about 95,  
in Cough Epi-  
demical.

*Hamoptoe* Great, quick, *In extremi ple-*  
frequent, soft *nus, in mediocrup-*  
Pulses; I count- *tus;* the *Profun-*  
ed near 198 *dus* is a sign of  
beats in a mi- Death.  
nute,

pleu-

Pleurisic

Quick, frequent, vehement hard, ferrant; by an excess in crebrity it runs into a *Peripneumonia* or *Syncope*, by a defect into a *Sopor*.

*In extremus plenus in medio ruptus chorda extense similis Intensus.*

*Peripneumonia.*

Great, soft, undous, languid, sometimes *dicrotus*, or intermits; if comatous, less frequent, in a burning Fever very frequent.

The same Pulse.

Suppuration or Pulse of an In-Matter in the Cavity.

At first the inflammation is inordinate, unequal, more ordinate, as the Matter ripens, at last small, languid, quick, frequent, as in a

Intermitting after 12 *lctus*.

*Phthysis. Orthopnea.*

*Phthysis.* Unequal, inordinate, deficient, frequent, languid, 120 Pulses.

*Natans brevis* or *trahentis instar*, which seems to intermit, as the *Chinese* describe it. *Pul-*



*European Pulses.**The Chinese.**Pulmonic  
Asthma.*

Small, frequent, unequal, intermitting, 95 Pulses.

This Pulse is truly describ'd by the *Chinese* as above.*Hysterical  
Asthma.*

The same but more frequent; above 100 Pulses, and 34 Respirations.

*Exundans.*

Heat, fullness in the Breast, with Flux of the Belly.

*Exundans**These Pulses depend on deficient Pulses, or the unequal.*

Dropfie of the Breast.

Unequal, small, frequent, languid, intermitting.

*Profundus* in the first place.

Palpitation, Syncope.

See the Cephalic Circulation,

Cold in the Lungs

*Languido tardus.**The*

The natural Pulse in the *Via Pulmonum*  
*natans rarus brevis.*

These Pulses, according to the Chinese, indicate Diseases in the other Circulations.

*Natans plenus.*

The Throat swel'd,  
rarity of Stools, defect of Smell.

*Plenus magnus, crebro acutus.*

Driness in the Throat, driness in the Skin.

*Chorda tensæ similis.*

Great Cold in the Guts.

*Profundus subtilis, crebro acutus.*

Hot and cold Pores stop't.

*Natans* in 3 places.

Rheum in the Eyes, Nose, Flesh, with Pain.

*Profundus.*

Sleepiness.

Note, That the Chinese make the great Guts an *Intestinum*, or *Adjunctum* to the Lungs, because of their being known by the Pulses in the *via Pulmonum*.

Note, That in all the Diseases in the Thoracic Circulation the Pulses are more equal, but in those of the Lungs more unequal, and the Circulation thro' the Lungs properly belongs to the general Circulation, being a part of it; and I have plac'd the *Catarrhus Suffocativus* there in the general Circulation which is stop'd by the coagulate Blood in the Lungs.

T A B.

## T A B. IV.

Containing the Diseases in the third particular Circulation, or the Celiac Circulation, or Via Ventriculi in the second place of the right Arm.

These Diseases depend on exceeding Pulses.

The European Pulses. The Chinese.

*Cardialgia Magnus equalis*, Chorda, tense or great *celerior minime & celerrimus*, or heat in the *durus*, Etmuller. *magnus plenus*, Stomach.

the *subtilis profundus* is good, the *natans magnus* or *chorda, tensa, similis*, fatal.

Inflam- Hard, small,  
mation of quick, frequent.  
the Sto-  
mach.

Strength  
of Sto-  
mach.

Vomiting *Debilis*  
Blood. *quens.*

*Durus in ad-  
mus plenus, raro  
obtusus.*

*In extremis ple-  
nus in medio rup-  
tus.*

The

*The Europæan Pulses. The Chinese.*

Indige-  
stion.

*Acutus creber,*  
or *natans crebro*  
*acutus, celerri-*  
*mus.*

Surfeit by  
cold Li-  
quors.  
Empti-  
ness and  
thirst and  
heat in  
the Sto-  
mach.  
Drunken-  
ness.

*Chorda & tensa*  
*frequens.*

*Crebro acutus.*

Vomiting Small, obscure,  
by deficient, and  
Worms. returning again.

*Brevis celerri-*  
*mus crebro-acutus,*  
*Parvi natantes,*  
or *intensi fre-*  
*quentes* in the  
upper and lower  
places of the  
Pulse.

*Natans.*

Empti-  
ness in the  
Belly.  
Poyson.

The *Pulsus ex-*  
*undans* promises  
Life, *profundus*  
*subtilis parvus,*  
Death.

*The*



*The European Pulses. The Chinese.*

Wind and  
pain in the  
Belly or  
Stomach,  
with incli-  
nation to  
Vomit.

*Intensus, or na-  
tans, crebro acu-  
tus.*

*Colica Bi-  
liosia* with  
fizzy Blood

The Pulse runs  
90 beats, great,  
quick, strong in  
the beginning as  
*Etmuller* says, or  
quick, frequent,  
small.

*Frequens celer,  
or celerrimus or  
parvus.*

Dropſie  
aſcites.

Small, fre-  
quent, hard,  
with a tenſion.

A great *natant*  
promiſes Life,  
but the *profun-  
dus subtilis* is  
proper to the  
Dropſie.

Tympa-  
nites,  
which is  
an Inflam-  
mation  
in the  
Muſcles  
of the Bel-  
ly at firſt,  
and extra-  
vate Se-  
rum there

Quick, fre-  
quent, *subdurus*.

*The*

*The Europæan Pulses.    The Chinese.*

*Jaundice.*    Small, hard,  
frequent.

These Diseases depend on deficient or unequal Pulses.

Want of  
Meat,  
want of  
Appetite.

*Natant*, small,  
and remiss, or  
*raro obtusus*.

Boulimia    Rare, slow,  
and Phleg. small, languid.  
matic Hu-  
mours.

Weak    Small, weak.  
Stomach.

*Parvus debilis*  
or intermitting,  
like the pecking  
of Birds.

*Profundus*.

Acidity  
rising up  
in the  
Stomach.

Pain in  
the Sto-  
mach by  
drink.

*Tardus*, or *pro-  
fundus & chordæ  
tense, similis*.

Heat in  
the Sto-  
mach.

*Parvus natans*,  
or *frequens de-  
bilis*.

Eu-

## Europæan Pulses.

## The Chinese.

Vomiting Small, languid, Remits in three  
*nausea,* frequent, quick. places.  
*vellication*  
*singultus,*  
*languor.*

Cold in  
 the Sto-  
 mach.

*Languidus tar-  
 dus.*

Sick at  
 Stomach.

Languid, small,  
 slow, rare.

*Subtilis parvus,*  
 but if *intensus*  
*magnusceler,* fa-  
 tal.

Pain of  
 the Belly  
 without  
 intermis-  
 sion.

*Parvus.*

Oppres-  
 sion by  
 Meat or  
 Humors.

Slow, small,  
 languid, rare.

In the  
*Pica.*

Small, languid,  
 frequent, une-  
 qual.

Tumor in  
 the Sto-  
 mach.

Small, hard,  
 frequent.

Corrupt  
 Meat.

Small, unequal.

Europæan Pulses. Chinese Pulses.

In eruginous Cholera in the Stomach.

Small.

Cholera

diarrhæa

dysenteria.

Flux of the Belly with windiness.

Anasarca.

Small, quick, frequent.

*Parvus subtilis*

Indigestion.

Soft, undous & broad.

*Cadens Pulsus.*

These Chinese Pulses indicate Diseases in the other Circulations.

Chinese Pulses.

Europæan Pulses.

*Pulsus intensus trahenti similis.*

*Parvus.*

*Tardus.*

Quick Breath of hard Cure.

Much Fat.

Cold in the lowest parts.

Euro-



*Chinese Pulses.**Europæan Pulses.**Profundus*Diseases in the  
Kidneys.*Remissus*  
in three  
places:Hot Stomach,  
foetid Mouth,  
swelling in the  
Gums, hot and  
cold weakness.*Plenus na-*  
*tans.*Thirst and  
emptiness.*Intensus.*Pain of the  
Nerves.*Exundans*Much Vomit-  
ing.

## T A B. V.

Containing the Diseases in the fourth particular Circulation, called the Renall and Illiac, or Via Vesicæ; in which the Blood naturally Circulates the slowest.

These Distempers depend on exceeding Pulses.

## European Pulses.

## Chinese Pulses.

Strangury.

Plenus crebro  
acutus.

Suppression of  
Urine and  
Heat  
there.

Plenus magnus  
or exundans.

Heaviness  
in the  
Loins and  
Feet and  
Hands.

Crebroacutus, or  
celeres chorda  
tensa similis, or  
profundus.

Bloody Urine and  
purulent.

In extremis plenus,  
in medio ruptus, or mollis  
debilis, exiguus,  
frequens, natans.

X

Euro-

## European Pulses.

## Chinese Pulses.

Windy  
Gout with  
red Urine,  
pain in  
the Feet.  
Pain in  
Legs and  
Loins,  
heat in the  
upper  
parts.

Stone Rare and slow  
with stop in the beginning  
of Urine. and small, after  
inordinate, tur-  
bulent.

Inflam- Hard, quick,  
tion in the frequent.

Kidneys.

Suppres- Inordinate, fre-  
sion of U- quent, small,  
rine in the from *Aríteus*; or  
Bladder, quick and hard,  
by In- *Etmüller*.

flamma-  
tion,  
Blood or  
Stone.

*Pulsus chorda,*  
*extensæ similis,*  
or *raro obtusus,*  
and *Intensus* or  
*Exundans*.

*Profundus In-*  
*tensus,* or *profun-*  
*di celerrimi na-*  
*tans*.

Suppres-      A vehement  
sion of the      Pulse and quick  
*Menses.*      and frequent in  
the beginning,  
Dr. Friend.

*Fluxus ni-*      Great, quick,      *Crebro acuti ce-*  
*mius Men-*      frequent.      *leres.*  
*sum* in the

begin-  
ning.

Concep-  
tion of a  
Female.

Concep-  
tion of a  
Male.

Concep-  
tion of a  
Male and  
Female.

The Con-  
ception of  
90 Days.

*Chlorosis*  
*or febris*  
*alba or fe-*  
*mini re-*  
*tentio.*

Small, frequent  
quick, unequal.

Great exun-  
dant Pulse in the  
right Hand.

A great exun-  
dant Pulse in the  
first place of the  
left.

The exundant  
Pulses in both  
Hands.

*Crebro acutus*  
*celer.*



Europeans.

Chinese.

*Fluxus se-* Small, weak, *Accutus creber.*  
*minis* old frequent Pulses  
 Gleet, and 94.  
 the Drop-  
 fical Wa-  
 ter in the  
 inferiour  
 parts.

These Diseases depend on deficient Pulses.

*Menstrual* Small, frequent, *Raro obtusus.*  
 old Flux. weak, intermit-  
 ting.

*Diabetes.* Weak, quick,  
 frequent.

Flux of  
 Blood,  
 and the  
 Belly  
 much  
 sweat. *Raro obtusus.*

Pains in  
 the *Vacui or rari*  
*parvi.*

Calves of  
 the Legs  
 and Gout.

Watry *Profundus.*  
 Wind.

Euro.

## Europæan Pulses. Chinese Pulses.

After a Weak, unequal, rare, or *Natans*, if *va-*  
 long sup-qual, frequent, unequal, or *cuus* Death.  
 pression of *Menses*. frequent, unequal, deficient;  
*Etmuller.*

Coldness  
 in the  
 lower  
 parts.

The slow Pulse  
 in three places.

*Fluor al-* *Vermicular* or *Tardus*.  
*bus.* small, and slow.

The natural Pulse is *profundus crebro acutus*. To the *Via Vesicæ* belongs the *Porta Vita*, or the *Genitals*, and *tertia pars corporis*, or the Skin, Flesh, and Hair; because in these parts the Circulation is slowest, and the *Pulsus tardus* indicates coldness and dryness in the Skin and Flesh, and *raro obtusus* the same.

The Pulses indicate some Symptoms in the other Circulations according to the *Chinese*.

Chinese Pulses.

The Europæan.

*Pulsus*  
*chorda,*  
*tense, si-*  
*milis.*

X 3

Chi-

## Chinese Pulses.

*Remissus*  
*parvus.*  
*Parvus*  
*subtilis.*  
*Frequens.*

*Crebro a-*  
*cutus.*  
*Natans in-*  
*tensus.*  
*Natans*  
*valde*  
*magnus.*  
*Natans.*

## European Pulses.

Pain in the Sto-  
 mach.

Flux of the Bel-  
 ly and Wind.

Heat in the Sto-  
 mach and fœtor  
 in the Mouth.

Weak Stomach.

Deafness.

Pain in the  
 Head and Reins.

Wind in the  
*Via Pulmonum*,  
 or suppression of  
 Urine, stop in  
 the *Intestines*.

I call this Circulation the most slow, be-  
 cause farthest from the Pump of the Heart;  
 and the Blood moves slow thro' the *Seminal*  
*Vessels*, because of their Contorsion; it  
 moves slow thro' the *Illiæ* because the Ve-  
 locity decreases by the several branches sent  
 forth in its passing to the end of the *Illiæ*,  
 and because of its difficult reflux from the  
 Feet.

I will give an instance of my method of  
 finding out the Disease by feeling of the  
 pulse

Pulse in an *Hæmoptoe*, which is a Disease in the *Thoracic* Circulation.

In the middle place of the left Arm I observed a great, soft, quick, and frequent Pulse, which by the Pulse-Watch run 98 beats in a Minute, and therefore this Disease depends on an exceeding Pulse, and a great rarification of Blood, which is the antecedent Cause of the Disease ; and since the Pulse is an exceeding Pulse, the external Causes of it must be the hot Regimen ; as hot Air, hot Baths, hot Diet, great Exercise, great Passion, suppression of Evacuation ; some of these rarified the Blood, and were the external Cause of the Disease. In this Disease the part affected was discovered, by considering that the general Circulation tended towards the upward branches of the *Aorta*, which I found by the exundancy of the Pulse in the left Arm in the first place of the Pulse ; and I found that the *Thoracic* Circulation was most affected by the Pulse, great, soft, and frequent in the first place of the right Arm.

The Symptoms of the Disease I deduced from an exceeding Circulation, as the Head-ach, Thirst, Fever ; but the Pain in the Breast depended also on the stagnation of the Blood in the *Thoracic* Vessels, which hinders the reflux and efflux of the Blood, and deprives the Pulse and Heart of sufficient Blood to



fill them; and this vacuity we know by the soft Pulse, which the *Chinese* describe by the feeling the stalk of an Onion full without, and empty within. My Rule, in short, is this.

1. Feel the second place in the left Arm to know the greatness and strength of the general Circulation, and if it tends towards the upward place, which the *Chinese* call the place of the *Calor Primigenius*, 'tis a Disease in the upper branches of the *Aorta*; but if the Pulse seem to tend more to the third place of the Pulse, 'tis a Disease in the branches descending of the *Aorta*, which the *Chinese* call the place of the *Humidum Radicale*. Thus we find which way the general Circulation tends upwards or downwards in Diseases.

2. The tendency of the general Circulation being observed, and the antecedent and evident Causes being deduced from it; the next Thing to be observed, is the part affected by the Pulses altered in the several Circulations, and we must find that by examining the Pulses of the *Cephalic* or *Pulmonic* Circulations; if the tendency be upwards, or that of the *Celiac* or *Renal* Circulation, if the tendency of the general Circulation be downwards.

I confess this Method requires some Experience to know what we feel, and what to call each Pulse; but by the Scheme I have given of the exceeding and deficient Pulses

Pulses in each Circulation, it is made easie ; and since no Art can be obtained without Industry and Practice, the Physician can never learn the Art of feeling the Pulse, and discovering the part affected, but by long Observation and Experience, and he must use the *Chinese* Rules for feeling the Pulse, viz.

The Physician must be Healthful, Fasting, free from Cares, and take a reasonable time to feel the Pulse in both Arms ; and the Patient must be Fasting, and his Arm plac'd on a Pillow with the Hand upwards, and we must apply three Fingers of the right Hand to the Patient's left, and those of the left to the Patients right, one Finger above the bone of the Wrist, the second below, and the third next to it ; and we must not expect the same Pulses after *Opiates* and Evacuations, as before, and some Symptoms alter the Pulse of a Disease.

The Physician must measure the Pulse by his own Respiration, there being naturally 4 or 5 Pulses to one Respiration.

I measur'd the *Arteries* in Dr. Drake's Anatomy with Compasses Tab. XX. and found the distance from the *Aorta* cut off from the Heart, to the basis of the Head, about fourteen parts or degrees of my Ruler.

From the same place of the *Aorta* to the *Diaphragm* 13 degrees.

From

From the *Aorta* to the *Celiaca* 14 degrees.

From the *Aorta* to the Arteries of the Kidneys 16 or 17 degrees.

From the *Aorta* to the Feet 66 degrees.

From the *Aorta* to the middle place of the Pulse in the Wrist 36 degrees, in the left Arm.

The Heart injects the Blood with the same contraction and force towards all parts alike, and those upper parts which are near to the *Aorta* required the greatest force to carry the Blood to them, and thro' their Circulations, because of their situation above the Heart; for this reason the Blood is carried into the Head, and thro' that Circulation with the greatest force, and therefore was placed but 14 degrees from the *Aorta*. The Pulse in the first place of the left Arm, is a sign of the greatest force of the Heart, and is the Exundant and Cephalic Pulse; and in that place we must look for the Diseases in the Cephalic Circulation, when it runs too fast or slow.

There is a Pulse in all the Arteries of the Head, (as we perceive by the Pulses in the Temples) and if that be naturally great at the basis of the Head 14 degrees from the *Aorta*, when the Pulse of the Heart is preternaturally greater, that Pulse must go one degree farther into the Head; and at the same time the Pulse which runs naturally,  
and

in Health 36 degrees in the left Arm, but by a greater Pulse of the Heart must be carried in the Artery of the Arm, a degree farther to the first place of the Pulse, and make it appear above the bone of the Wrist, exundant, or great and vehement; for the the Pulse there rises into the Hand, and meets the great resistance, and therefore appears great in that place, as well as in the second place below the Bone, where it naturally appears great by the resistance of the Bone.

Not only the small distance of the Head from the Heart, makes the circulation more violent into the Head, but also the rise of the Cephalic Arteries in the beginning of the *Aorta*.

The Arteries in the *Thoracic* circulation arises from the *Subclavian* Arteries, as the *Intercoſtal*, *Mammaria*, and *Arteria Bronchialis*, and some other *Intercoſtal* Arteries from the descendent Trunk of the *Aorta*.

Since the Origin of these Arteries are more distant from the beginning of the *Aorta* (where the force of the Blood is greatest) than the Cephalic Arteries, the Blood will run with a less force thro' them, than thro' the cephalic Circulation, in a natural and healthful state of the *Thoracic* Circulation; and since the Pulse we observe in the right Arm, in the first place, is not so great as in the first place of the left, because  
the



the Artery of the right rises farther from the Head of the *Aorta* than that in the left. The *Chinese* have appropriated this Pulse, to shew the less force of the Circulation thro' the Lungs and Breast, and this they call *Natans*; and when the Heart is preternaturally moved with a greater or less contraction, upon account of the Diseases in the *Thoracic* Circulation, the Diseases will appear in this place of the Pulse.

Tho' the distance betwixt the *Aorta* and *Diaphragm* be but 13 degrees, yet this circulation running thro' all the parts of the *Thorax*, which is larger than the capacity of the Head very much: The *Thoracic* Circle is twice as large as the *Cephalic*, and the Blood must move slower in it, because of the Original distance of their Arteries, as well as largeness of the Circle.

But since the *Cephalic* and *Thoracic* Circles are nearest to the Heart, they must be most affected by an exceeding Circulation, and least by a deficient.

The *Arteries* of the *Celiac* Circulation arise more distant from the beginning of the *Aorta*, then the *Thoracic* and *Cephalic Arteries*, and therefore the Blood is injected thro' them with less force, when the Circulation is natural; and because the Blood comes into the right Arm with less force so far as the middle place, the *Chinese* have appropriated the *Celiac* Circulation to the Pul-

ses

ses th  
call  
the  
exce  
way  
T  
dista  
ther  
with  
in t  
the  
plac  
Circ  
is h  
A  
Fle  
and  
aus  
S  
are  
the  
fici  
the  
Blo  
the  
ten  
an  
ex  
of  
ca  
fa

ses that are in the middle place, which they call the *Remissus*, or soft and low ; and here the Diseases of the *Via Stomachi* appear in exceeding and deficient Circulations that way.

The *Renal* and *Illiac Arteries* arise most distant from the Origin of the *Aorta* ; and therefore the Blood is injected through them with the least force ; and since in both Arms in the third place the Pulse appears least, the *Chinese* have appropriated the third place for the Pulse of the *Vesica*, or lowest Circulation, and 'tis whilst that Circulation is healthful, *profundus*.

*Note*, That the Circulation thro' the Flesh and Skin is remote from the Heart, and runs slow, and has the Pulse *Profundus*.

Since the *Illiac*, and *Celiac* Circulations are largest, and the Blood runs slower in them ; these must be soonest affected by deficient Pulses and Circulations, and least by the Excessive.

In a natural healthful Circulation the Blood runs 36 degrees in the left Arm to the middle place of the Pulse, called *Chordæ tensæ similis*, or great and high in appearance to the touch ; if the Hearts contraction exceeds and is greater, the chief appearance of the Pulse will be in the first place, because the Blood must run a degree faster and farther, and the appearance of the Pulse  
moves

moves with it to 37 degrees in the Arm; but if the Heart moves slower, the appearance of the Pulse will be lower in the third degree, and the place of the Pulse will appear at 35 degrees in the Arm.

*Note,* That the resistance in a conical *Tube*, and the rising of the Pulse into the Hand, makes the appearance of the Pulse to vary its place according as the Blood is injected by a different force; with a greater force it appears in the upper place, with a less in the lower.

We may, by considering the difference of the three pressures, guess at the particular place of the Disease; if we find the Pulse great and vehement we press it least, but may guess that the Circulation runs thro' the *Capillaries* and *Superficies* of any part. If the Pulse be moderate we use a moderate pressure, and find the Blood runs moderately in the greater Vessels; but if the Pulse be weak and low, we use the greatest pressure to feel it, and find the Circulation is small and weak and decaying.

I have given an Account of the protrusion of the Blood thro' the *Arteries* in different Streams and Celerities; and it will not be Impertinent to observe the force contrived to help its return, which alters the Pulse. From the Head it is forced back by the contraction of the *Sinus* in the Brain, and by the Pulsatory Motion of the *Arteries*,  
as

as well  
a Siph  
Fro  
is prot  
Thorax

Fro  
Blood  
Diaph  
of the  
Pulsat  
have  
Liver

. Th  
help c  
tions,  
and t  
reflux  
of su  
cays  
after  
Heart  
Circu

Th  
the l  
of th  
Vess  
flux  
and  
ly th  
Mus

as well as by its own weight, like Water in a Siphon.

From the Veins in the *Thorax* the Blood is protruded by the respiratory motion of the *Thorax*.

From the *Celiac* and *Mesenteric* Veins the Blood is protruded by the depression of the *Diaphragm*, and contraction of the *Muscles* of the Belly; and also the Veins have a Pulsation in the *Porta*, as those in the Head have for the help of the Circulation thro' the Liver.

The *Renal* and *Iliac* Circulation has the help of the pressure of the respiratory Motions, but in the Legs the voluntary Motion, and tone of the Parts and Valves, help the reflux from the Legs, and in them for want of sufficient force, the Circulation first decays in the Legs, next in the *Celiac Arteries*, after in the *Cephalic* and *Thoracic*, and the Heart moves last by reason of its peculiar Circulation thro' the *Coronary Arteries*.

The motion of the *Lympha* is joined with the Blood thro' the *Arteries*, but the return of the Blood and *Lympha* are in separate Vessels; and the cause which helps the reflux of the Blood, helps that of the *Chyle* and *Lympha* thro' the same Vessels, especially the reciprocal motion of the respiratory *Muscles* about the Belly.



A slow return of the Blood causes a rare Pulse; the Blood cools and condenses by a slow motion, and stimulates little, which renders the Pulse slow and small; the irregular unequal reflux makes the Pulse unequal, and a *Syncope* is produc'd if the return stops, as well as if it returns too fast; the reflux of the Blood is deficient when any of the forces above-mentioned are deficient; the Blood regurgitates in the *Aorta*, and irritates the Heart to intercurrent or unequal Pulses, as the *Diocrotus*.

---

Some

Some  
Ch  
reta

I Ha  
na  
and fir  
the N  
nese:  
ses, t  
Europe  
must  
Name  
The  
Pulses  
to the  
Pulse  
um re  
Pulse  
um va  
happe  
gust at  
which  
cini i  
anoth  
and t  
Vriun  
natur

*Some Remarks upon the other Parts of the Chinese Art, to shew which we must retain, and which we must reject.*

I Have above mentioned the six Pulses, naturally appearing in the six Places; and since we have in *Europe* no Names for the Natural Pulses, we must retain the *Chinese*: As to the exceeding and deficient Pulses, they differ very little; but because the *European* Names are most known to us, we must retain our own, and reject the *Chinese* Names.

The *Chinese* observe these Vices in the Pulses; the upper Pulse will shift down into the place of the middle Pulse, or a lower Pulse into an upper Place: The first is *Vitium repletionis*, that is, a greater and fuller Pulse than naturally; and the other is *Vitium vacui*, that is, a smaller and softer Pulse happens than naturally. The *Vitium exiguitatis* is, when a Pulse invades the other, which is not so strong. The *Vitium latrocinii* is, when one Pulse is inconsistent with another, as the Pulse of the Heart and Reins, and these Pulses are call'd Enemies. The *Vitium rectitudinis* is, when a Pulse keeps its natural Name, but is more Intense, and

Y rem

remiss. All these Faults are sufficiently explain'd by the exceeding and deficient Pulses, or the full and empty ; and the Emmitry of the Pulses, and their Relations, are a pure unnecessary nicety, by which the *Chinese* signifie the communication of some elementary Qualities, or the inconsistency of one Pulse with another, or the contrariety of the *Cacochymia's* signified by the Members. See the first part of the *Pulse-Watch*, pag. 384.

I having accomodated the Pulses of the *Chinese* and *Europeans*, I will now proceed to the considering the Circulation.

As to the *Chinese* *Via* or manner of their Circulation of their *Calor Primogenius*, and *Humidum Radicale*, we must reject it, and stick to our Anatomy, which has discovered the true Circulation to us, and by that we find how a Disease may circulate from the Head to the lower Circulations; so a sharp and viscid Lympha may circulate from the Head, where it occasions a Defluxion and Inflammation down the Jugulars to the Heart, and thence be transmitted thro' the *Thoracic* Circle, and thence to the *Celiac* Arteries, or *Renal*, or *Iliac* Circle, and there the same Humour may produce Pains, Strangury, or Gout ; and not only Diseases, but all *Cacochymia's*, may circulate either upwards or downwards, as the general Circulation tends; and we need

not

not the 12 imaginary Ways of the *Chinese*, to explain the transmission of Humours or Diseases.

I will next consider how to accomodate the *European* and *Chinese* Cacochymia's, which are ill describ'd by the *Chinese* as to their Original, who attribute them to the five Members; but the *Europeans* know their natural rise is from the *Secretory Glands*, and from thence they are re-funded into the great Circulatory Vessels with the *Chyle*, where they become the *stimulus* of particular Circulations; and we may agree with the *Chinese*, that the Choleric Cacochymia appears most evidently in the Cephalic Circulation, which is quickest and strongest; and this Circulation arising immediately by its Arteries from the Heart, it was call'd by them the *Via Cordis*: The salt Cacochymia most affects the *Thoracic* Circulation, which has a Celerity next to the Cephalic, and in this Region the salt Lympha is naturally secreted, or præternaturally, for which reason 'tis called *Via Pulmonum*. The *Celiac* Circulation is slower than the other two, and in that the pituitous Lympha is generated and secreted, as well as the Splenetic Acids, and this Circulation is called the *Via Ventriculi*, &c.

The *Renal* and *Celiac* Circulations are most slow, and so is the Circulation thro' the Legs, and the habit of the Body, where



the Blood running most slow, the Serofities are secreted there into the Lymphatics, or else stagnate in the Extremities, for which reason this is called the *via Vesicae*.

The Heart is accounted by the *Chinese* the Symbol of the Choleric Caco-chymia, the Lungs of the Salt, the Stomach of the Pituitous and Acid, the Reins of the Serous, the Liver of the Sanguine Constitutions; and by the Pulse of the Liver we must observe the general Circulation, when it runs with an *Aequilibrium* thro' all Parts; and since the Caco-chymia's do first circulate in the greater Vessels, we may discern the prevailing Caco-chymia by the Pulse of the Liver, as well as all those Diseases which lie in the general Circulation.

When the general Circulation tends towards the *Cephalic* most, the *Chinese* will say the Liver invades the Heart; when it tends to the *Thoracic* most, they say the Liver invades the Lungs; and if a Disease removes from the *Cephalic* Circulation to the *Thoracic*, as the Lethargy and Quinsie, does by the Jugular Vein, the Heart invades the Lungs; or if a Disease or Caco-chymia removes from the *Thoracic* Circle to the *Celiac*, the Lungs are said to invade the Stomach, &c.

By the preceeding Discourse 'tis evident, That the five Members signify the Caco-chymia's, and the four Circulations are their

their  
five  
the  
reduc  
mod  
them  
and  
If  
ly tra  
pocra  
his C  
Nice  
have  
W  
scrib  
and  
Heat  
incre  
to an  
the o  
must  
the a  
I  
struc  
the C  
the  
T  
tion  
by t  
weal  
and

their *Vie*, therefore the true *adjuncta* of the five Members are those Parts which receive the same Arteries, and both Intestines are reduc'd to the *Celiac* Circulation; for 'tis the modern Commentators that have made them the *Intestina* or *adjuncta* to the Heart and Lungs.

If we had the Old Book *Nay Kion* intirely translated, it might have prov'd like *Hippocrates*, more clear and true than any of his Commentators, who, by their extreme Niceties and symbolical Argumentations, have obscured the Sense of the Author.

We can agree with the *Chinese* to prescribe Evacuations for the exceeding Pulses, and Sudorifics for the deficient. If the Heat or *Calor Primogenius* abounds, we must increase the *Humidum Radicale* to reduce it to an equality; and when one abounds and the other is deficient, at the same time, we must first apply the deficient, and then Purge the abundant.

I will next give an Account of the destruction of the five Members, according to the *Chinese* Notion, which is, when one of the Circulations stop in dying Persons.

The destruction of the Heart is the stagnation of the Blood in the *Cephalic* Circle, by the blackness of the Tongue, and its weakness, by the Convulsion of the Eyes; and the Pulse is like a flying Ribbon to the

ormer : I will add, that Sense, Motion, and Swallowing, cease.

In the destruction of the Lungs or *Cephalic* Circulation stoppt, the Skin is dry, the Hair falls, the Breath is short, and the Pulse like a Feather flying in the Air, to which I will add, the rattle in the Breath, and stop of Spir.

The Liver is said to be destroy'd as the general Circulation stops ; the Signs of which are blackness in the Face or Skin, the Eyes sink and are blind, they sweat continually, and the Pulse is *Instar Chordæ recens extensæ*.

The destruction of the Stomach is the stop in the *Celiac* Circulation ; the signs of which are coldness in the Mouth, Tumor in the Feet, heat in the Loyns, drawing of the Lips, the Pulse like the dropping of a House-top, or a Hen's pecking ; to this I will add sickness at Stomach, and Coldness, Fainting

The destruction of the Reins is a stop in that Circulation ; the signs of it are black Face, dry Mouth, and Ears, pain in the Back, continual Sweat, the Pulse *instar lapidis manu excussi* or *projecti* ; to these I may add blackness in the Feet, and Coldness and Swelling, which pits there.

Since I have describ'd and accomodated the *European* and *Chinese* Pulses, their several Circulations or *Via Members* and Caco-chymie,

chymie, the causes of the Pulses by the *Calor Primogenius* and *Humidum Radicale*, which are our red *globuli* of the Blood, and the Serum; I think I have evidently explain'd the *Chinese* Art, if not fully; but if I have mistaken their Sense, yet I have taken those Hints from their Writings, which in some measure will help to improve this Art.

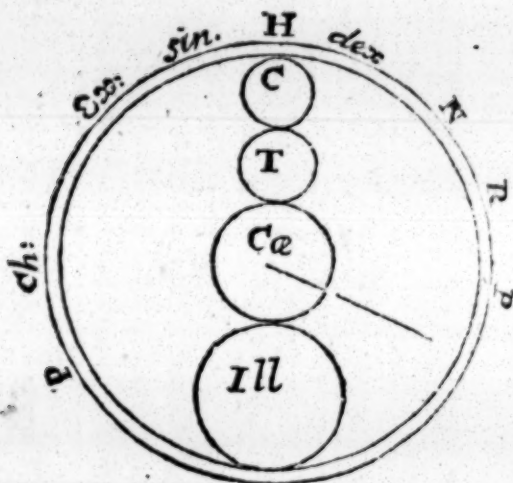
I must always own that I am infinitely oblig'd to the Honourable *Charles Hatton* for the Present he made me of *Cleyer's Specimen Medicinae sinicae*, about three Years since, which I have read very often before I could understand it. And I must also express my Gratitude to an unknown Benefactor who sent me a Pulse-Watch, which runs but one Second short of my Minute-Glass. I have here annex'd the Figure of a Pulse-Watch, representing the several Circulations and natural Pulses.

*Sinistra*



*Sinistra*  
*Ex. The Exundant*  
*Pulse.*  
*Ch. Chorda tensa sim.*  
*P. Profundus.*

*Dextra*  
*N. Natans.*  
*R. Remissus.*  
*P. Profundus.*



*The great Circle H divide into 24 equal Parts, and those sub-divided into 5 Parts, each figur'd 5, 10, 15, 20, &c. to 120.*

*C. For the Cephalic Circle, T. The Thoracic, Cæ. The Cæliac, Ill. The Illiac Circle.*

---

*An Inquiry into the Nature,  
Use, Causes and Differences of  
Respiration, and the Progno-  
stication which may be made  
by it in Diseases.*

---

C H A P. I.

*Concerning the Nature, Use, and Causes,  
of Respiration.*

**S**INCE Respiration is a help to the Pulse, in carrying on the Circulation of Blood in its reflux, and the secretion of Humors, and the mixture of the Chyle and Lymphatic Serum with it, I thought it necessary, after having treated of the Pulse, that I should describe the nature of the Respiration, and its true Causes and Uses.

The true efficient Causes of the Respiration are the Animal Spirits, which move the Muscles of the *Thorax* upwards, and the  
*Dia-*

*Diaphragm*, which presses the Belly downwards ; and there is also necessary to Inspiration a due disposition in the Air-Vessels of the *Trachea*, to receive the Air, and of the Blood-Vessels to receive the Blood, to irritate the Lungs to Inspiration. *Aristotle's* Opinion seems to me very just, That the Lungs have the Principle of their Motion from the Heart, that is from the Pulse, which injects Blood into them ; since a hot great and frequent feverish Pulse, makes the Respiration great, and feverish frequent. A slow and a rare Pulse makes the Respiration slow and rare, and a moderate healthful Pulse makes the Respiration moderate and healthful ; and naturally in a healthful Pulse, which runs 70 beats in a Minute, we have 14 Respirations. The *Chinese* observe four or five Pulses, in Health, to one Respiration, and they make the healthful Respiration of the Doctor, a measure for the Pulses of the Patient, who allow 4 or 5 Pulses to one Respiration in Health ; and they account the Pulse slow, if there be but three Pulses in one Respiration, if but two Pulses very slow, and a cool Circulation ; but if there be six *ictus* of the Pulse in one Respiration, they must be exceeding and frequent ; if seven, the Pulse is very quick, and a violent Heat or Circulation ; nine small *ictus* of the Pulse indicate Death, in one Respiration, ten, more danger, 11 or 12, immediate Death. If

If but two *ictus* in one Respiration, or only one, they indicate Death ; in two Respirations, one *ictus* of the Pulse, certain Death.

The *Chinese* direct us to observe 50, or 45, Pulses in 9 Respirations ; if more, we are too hot or feverish, too cold, and they measure their general Circulation by the Respiration ; for in one, they say, the Blood moves six Fingers, and in the space of one Day, they observe 13500 Respirations.

In Children of five Years Old, the *Chinese* observe the Pulse, and measure it by the Respiration of the Physician, and observe in Children of that Age, 66 Pulses to one Respiration, in Health ; 7 or 8 shew the exceeding Heat, 4 or 5 an excess of Cold, or a deficient Circulation.

By these Instances, the dependance of the Respiration on the Pulse is plainly prov'd, and the first Respiration was produc'd by the shutting the *Foramen Ovale* after the Birth of the *Fœtus*, and then the Circulation begins in the Lungs, and irritates an Inspiration.

It is agreed by all, that there are five Pulses to one Respiration ; the Reasons of which is, because in five Pulses, at least, five Ounces of Blood is injected into the Lungs, which fills the *Arteria Venosa*, and that quantity or weight was necessary to irritate the Lungs to an Inspiration ; and as  
the



the motion of the Heart is altered by the different Tempers or secreted Humours of the Blood, so are also the respiratory Organs, by the same differently moved; and the Pulse always, in Health, regulates the motion of the Lungs, but in Diseases their actions are hindred, and become disproportionate.

In a natural Inspiration, I have observ'd that the Inspiration lasts three Pulses, and the Expiration but two, because the Inspiration is difficult, and takes up more time naturally than the Expiration, which is more easie by the weight of the *Viscera* hanging on the *Diaphragm*, and by the weight of the *Thorax*, and *Atmosphere*, as well as the contraction of the Muscles of the Belly, all which concur to the action of Expiration in a shorter time. To which I may add some Muscular Membranes of the *Trachea* and Lungs, but in Inspiration the *Thorax* is lift up, the Lungs distended, and the Belly pressed down, and outwards, by the Inspiration, the Air is forc'd into the Lungs to fill the expanded *Vesiculae*, and by the Expiration the Air joyned with some hot Fumes from the Blood, and the vapor of the *Pulmonary Lympha* separated by the Glands there, are expelled; and this in the first use of Respiration, to cleanse the Lungs from Fumes, and admit the Air to distend them.

The

The constant influx of the Animal Spirits into the Muscles design'd for Respiration, is the primary Cause of that action, like the same Influx into the Muscles of the Heart, and both Heart and Lungs are naturally and mechanically moved, but altered by the Cachymia and Heat.

There are two cessations of motion in Respiration, the External or the Quiet before Inspiration, and the Internal or the Quiet betwixt Inspiration and Expiration, and this Quiet is observed to be proportionable, or eurithmal in Health; but in Diseases longer or shorter, the quiet before Inspiration takes the time of three Pulses, but betwixt Inspiration and Expiration but one, in that Internal Quiet; but in many Diseases the Inspiration is finished in one Pulse, and the Expiration in another, and the Quiet is inconsiderable.

I observe that I can hold my Breath in Expiration, the time of 15 Pulses, and no longer, in which time one pound of Blood will pass into the Lungs; but I cannot hold my Breath after Inspiration above 5 Pulses, or not half so long as after Expiration; and after holding the Breath expired, the next Inspiration evidently accelerates the Pulse. By this Observation the Inspiration is most necessary to the Circulation.

It was the Old mistaken Opinion, that the chief Use of Respiration, was to admit  
the

the Air for the Generation of Animal Spirits ; and the Moderns still retaining too much of this Error, that the Air is admitted into the Blood thro' the Lungs, for which I could never apprehend a sufficient Reason, for if the Air entered into the Veins of the Lungs that could not distend the *Vesiculae*, and keep them inflated by a pair of Bellows, if it passed into the Veins, which the following Experiment contradicts.

I cut both the *Ventricles* of the Heart open in a Sheep, and then put the Heart and Lungs under Water, as they are naturally joined, and after I blew up the Lungs by Bellows, but could not perceive that any Air made bubbles in the Water. I another time pumped a Sheep's Lungs full of Water by a Hand-Engine, and they remained full for some time ; but the Water dropt out at last, thro' the Pores of the Skin ; and these Experiments intimate, that neither Air or Water passes thro' the Lungs into the Veins, and if the Air should pass that way, it would stop the Circulation thro' the small Vessels, as Air stops the course of Water in Lead Pipes ; besides the Blood has no need of Air from the Lungs, because all the *globuli* were filled with Air, when they acquired the nature of Chyle, and all Fluids full of Air, and for these Reasons I reject this Old Error. And it was also an Error that  
the



the Expiration served only to expel Fumes, for that only serves to expel the Blood out of the Lungs, into the left *Ventricula* of the Heart.

'Twas generally asserted, That when the Inspiration was great and quick, that the Heat required it as a *flabellum* to the Heart; and if the Expiration was great and quick, the hot Fumes did abound, and wanted Evacuation.

The same was the erroneous Opinion about the Pulse, that they and the Lungs distended themselves to draw in the Air for Generation of the Spirits, and in their contractions expelled their Fumes.

That the Air was attracted by the Heart, was sufficiently confuted by *Galen*, because in the cohibition of Breath the Animal is suffocated, and that does not alter the Pulse, the venticulation of the inward Heat and Flame was *Galen's* Notion, but that is sufficiently refuted, because the Animal has innate Heat before Respiration, and the *Galenists* knew not the Circulation which produces the heat of Blood, nor that there was a Pulse in the Embryo, before Respiration.

The next natural Use of the Lungs is to mix the Chyle, Blood, and Lympha, in the *Pneumonic* Vessels, and to emit such Fumes as arise from that mixture, and such are generated in the Blood by frequent Circulation, which naturally perspired either thro' the



the Pores, or Lungs. The quantity of the *Perspirabile* thro' the Lungs, *Sanctorius* computes at  $\frac{1}{16}$  lbs. in 24 Hours; other Writers more. *Bartolet* shews us how to gather this *Pneumonic Perspirabile* in his *Pneumatolabium*, and how to CrySTALLISE the Volatile Salt of that Lympha, by evaporation; and this proves that the matter of our Perspiration is a Volatile Salt diluted in a Lympha, and mixed with a putrid Air or Fumes. I tried to gather the *Perspirabile* thus, Take a flask Bottle, and stop it with Clay, and put thro' that two Pipes, hold the Bottle under Water, then blow into it by one of the Pipes, and leave the other open: I could not gather above one grain in a Minute, which is but three ounces in a Day; this seem'd too little, and wants farther Experiments.

But the principal Use of the Respiration is to promote the reflux of the Blood thro' the *Vena Cava*, and *Porta*, and the distribution of Chyle thro' the *Lacteals*; not only the Liver, Spleen, *Pancreas*, Stomach, Guts, and Kidneys, feel the depression of the *Diaphragm* in every Inspiration, when it descends towards the Belly; but all the *Viscera* are also forced back by the Muscles of the *Abdomen* in every Expiration; and by these reciprocal Motions in every Respiration, all the Contents of the Belly are shaken and compressed, whereby the Blood in the *Porta* and *Cava* are pressed forwards towards the Heart,

Heart, and the Secretion thro' the Liver, Spleen, Pancreas, Kidneys, and Glands of the Mesentery are promoted by this agitation; the return of the Lympha, and the ascent of the Chyle, thro' the Thoracic Ducts is accelerated by the compression on the Belly: This pressure on the Veins was necessary, because the Blood moves very slow thro' the Circulation of the Belly, for the better Secretion of the slimy sub-acid Ferment of the *Prima Via*, and the Secretion of Fat, Choler, Splenetic, Acid, Pancreatic Juice, Urine. This pressure also promotes the *Peristaltic* Motion, and the Secretion of the Fæces, and Urine, which is done by holding our Breath; and this pressure is very great in Fits of the Mother, when the *Diaphragm* is violently convulsed downwards, and the Belly feels hard, and 'tis useful in Womens Labors.

'Tis certain, that Respiration is as necessary to Life, as the Pulse, since both promote the Circulation and Secretion of Humours, they have both the same Uses; they agree in their Causes, being moved by Muscles, they are irritated by the Blood according to its different Quality.

*Galen de usu pulsuum* observes, That all Physicians and Philosophers did believe, that the Pulse and Respiration had the same use, the preservation of innate Heat, and the generation of Animal Spirits.

We discern the death of an Animal by the stop of its Breath, and that Life begins with our first Breath. The *Chinese* begin their Circulation from the Lungs, and till *God breathed into Man the Breath of Life*, that is, 'till the Lungs were inspired, no Blood would come into the right Auricle of the Heart to begin the Circulation. 'Tis a known Experiment, That if the Lungs of a Dog be kept inflated by a pair of Bellows, the Pulse may be accelerated or retarded, and Convulsions do immediatly succeed the intermission of the Inflation: This clearly proves, the reciprocal Motions in Respiration, helps the Circulation, and the Pulse is made more frequent by every Inspiration, as we may observe in feeling of the Pulse; and after, in the expiration, it appears more rare.

There may be an imperfect Life in the Embryo, by the help of the Pulse, and the *Uterine Vessels* supply the want of Respiration, because they promote the reflux of Blood thro' the *Vena Cava* by the *Umbilical Chordæ*; besides the Respiration of the Mother compresses the Navel String, as well as the whole Embryo, whereby the reflux of Blood is much helped.

Tho' the Lungs and Heart are different Organs, yet they both conspire to perform the Circulation. The Pulse projects the Blood like an ordinary Pump, and the Lungs have



have also the Nature of other Pumps which act by compressing, as in Engines for Water.

When the Pulse, in Diseases, runs too fast or too slow, the Respiration is in the same manner depraved, so Exercise and Heat make the Pulse and Breath more quick, frequent, and great: Cold makes them more slow, rare, and less, and there are the same simple differences of Respiration, as there are of the Pulses.

The right *Ventricula* of the Heart is made for the use of the Lungs, to excite their Motion, by injecting Blood thro' the Lungs; and therefore those Animals who have Lungs, have always two *Ventricules* in the Heart, and the right is biggest, but weakest.

The motion of the Gills in Fishes, supplies the want of the Pump of the Lungs and *Diaphragm*, for by their motion they help the reflux of the Blood.

I opened a live Carp, and observed the number of the contractions of the Heart were about 30; and the Carp mov'd her Gills about 25 times in a Minute, and so did a Pike I observed about 30 times.

The Air which passes into the *Vesicula* of the *Abdomen* of Birds, and their *Thorax*, thro' the Lungs, supply the pressure of the *Diaphragm* in Birds. I counted 25 Respirations in a Hawk in one Minute. The  
 Z 2 full



full Inspiration of the Belly, helps Birds in their flying upwards, and contraction of the same their quick descent.

Those Animals who have a slow motion in their Lungs, have a slow Circulation, as in Frogs ; and the Heart beats also slow in Fishes, therefore in these the Circulation is slow.

Tho' we cannot count the Pulses in many Animals, we may count the Respiration in all Creatures, and in the least Children, and thereby judge of their Natural and Diseas'd Circulations and Pulses ; and the same may be of use in fat Persons, and Children, whose Pulses are difficultly counted, of some varieties of Numbers in Respiration of different Animals, I made some Observations.

---

*A Table of the Morning Pulses and Respirations in November, the three first Days open Weather, the rest Frosty.*

|        | Pulses. | Respirations. |
|--------|---------|---------------|
| Nov. 5 | 70      | 14            |
| 6      | 87      | 24            |
| 7      | 77      | 18            |
| 8      | 85      | 25            |
| 9      | 77      | 18            |
| 10     | 74      | 18            |
| 11     | 84      | 24            |
| 12     | 78      | 18            |
| 13     | 78      | 18            |
| 14     | 80      | 19            |

*A Table of the Morning Weight Pulses and Respiration, compared, and Weather.*

| March | Weight.           | Pulses. | Respiration. | Weather:       |
|-------|-------------------|---------|--------------|----------------|
| 18    | 173               | 77      | 13           | Rainy          |
| 19    | 173 $\frac{3}{4}$ | 83      | 18           | Foggy.         |
| 21    | 173 $\frac{3}{4}$ | 74      | 16           | Snow and Rain. |
| 22    | 174               | 76      | 19           | Cold windy.    |
| 23    | 175               | 72      | 14           | Great Snow.    |
| 24    | 174 $\frac{3}{4}$ | 80      | 13           | Open Weather.  |

( 342 )

| <i>March</i> | <i>Weight.</i>    | <i>Pulses.</i> | <i>Respiration.</i> | <i>Weather.</i>           |
|--------------|-------------------|----------------|---------------------|---------------------------|
| 25           | 176               | 75             | 16                  | Open mode.<br>rate Weath. |
| 26           | 176               | 75             | 13                  | Foggy.                    |
| 27           | 174 $\frac{1}{4}$ | 71             | 13                  | Openi Weath.              |

*The Pulse and Respiration compared with  
the Thermometer.*

| <i>April</i> | <i>Thermometer.</i>  | <i>Respiration.</i> | <i>Pulses.</i> |
|--------------|----------------------|---------------------|----------------|
| 10           | at Temperate         | 15                  | 76             |
| 12           | near Warm            | 15                  | 76             |
|              | a little above Cold. | 16                  | 77             |
| 14           | at Cold.             | 14                  | 70             |
| 15           | below Cold.          | 14                  | 74             |
| 16           | above Cold, Cloudy.  | 14                  | 72             |
| 19           | at Temperate.        | 14                  | 74             |
|              | above Cold.          | 14                  | 75             |
|              | a little below Cold, | 12                  | 60             |
| 23           | at Cold              | 12                  | 62             |

*A Collection of other Experiments in the  
Pulse and Respiration, of their altera-  
tions by the Non-naturals.*

**The Morning Pulse**

**The Morning  
Respiration.**

|                                                                                        |     |    |
|----------------------------------------------------------------------------------------|-----|----|
| In the Winter                                                                          | 70  | 14 |
| After a walk and dish<br>of Thea.                                                      | 80  | 16 |
| After Dinner                                                                           | 90  | 22 |
| Five Hours after Din-<br>ner, the Pulse sunk<br>10 Beats, the Respi-<br>rations 3 less | 80  | 19 |
| In <i>Septemb.</i> the Morn-<br>ing Pulse and Re-<br>spiration                         | 80  | 16 |
| After a Dish of Coffe-<br>the Pulse rose 8<br>beats, the Respira-<br>tions 3           | 88  | 19 |
| But they sunk before<br>Dinner to                                                      | 70  | 14 |
| After Dinner in<br>Health                                                              | 90  | 30 |
| After a walk of a<br>Mile                                                              | 90  | 33 |
| Pursive in a Morning                                                                   | 83  | 11 |
| After Riding eight<br>Miles                                                            | 95  | 30 |
|                                                                                        | Z 4 | 12 |



|                                                                                      |     |    |
|--------------------------------------------------------------------------------------|-----|----|
| In a thin Girl of 15,<br>in a Morning                                                | 90  | 29 |
| In the same after<br>Dinner                                                          | 120 | 34 |
| A Woman with Child<br>Fasting sinks the<br>Pulse 10 Beats, the<br>Respirations but 2 | 98  | 37 |
| In a fat Person, in a<br>Fever                                                       | 112 | 25 |

*The proportion of the Pulses and Respirations in some Diseases.*

|                                                    | Pulses. | Respirations. |
|----------------------------------------------------|---------|---------------|
| Green Sickness                                     | 115     | 27            |
| Intermitting Fever                                 | 100     | 35            |
| In a Colical Pain<br>with a Fever                  | 112     | 30            |
| In an Hysterical Or-<br>thopnea                    | 101     | 34            |
| In a second Fit                                    | 96      | 28            |
| In a Child, with In-<br>flammation of<br>the Lungs | 130     | 60            |
| In a Dropsie of the<br>Breast                      | 98      | 30            |
| In an Asthma                                       | 96      | 7             |

A purfiveness will  
reduce the Respi-  
ration to 9, 10,  
11, 12, breaths  
in a Minute,

*Note,* That the rising and falling of the Pulse and Respiration, depends on inward Causes, and but little on the Air or Weather. In Cold, Frost, or Snow, Rainy, and open Weather, I have observ'd both high and low Numbers, tho' Cold seems to raise the Pulse by retaining the hot *Perspirabile*, and Heat does certainly raise the Pulse, as warm Water will renew the beating of the Heart when it ceases, and the heat of the Hen caused the first Pulse. 'Tis observable, that the Pulse and Respiration in *England*, will not, by the use of the Non-Naturals, sink their Numbers proportionably, under the healthful Number, as they do exceed above it; for if there be 15 Respirations in the Sanguine, or healthful Temper, they may rise to 30 in a Minute, by the use of the Non-naturals: These Respirations I observ'd in divers Animals in a Minute, by observing their Breaths in Frosty Weather, or the motion of their Bellies or Nostrils, and we must allow both Inspiration and Expiration to every Respiration; it may be observed that the Pulse and Respirations alter upon the same accounts in Brutes as they do in Mankind. In

|                        | Respirations. |
|------------------------|---------------|
| In a Hawk              | 25            |
| In a Bitch             | 16            |
| In the same with Puppy | 24            |
| In a Grey-hound        | 13            |
| In a Horse             | 16            |
| In a Cow               | 14            |
| In an Ass              | 12            |
| In a Chicken           | 50            |
| In a green Goose       | 40            |
| In a Puppy             | 43            |

A Carp, the Gills and Mouth moved 26 times in a minute.

A Pike out of Water, 25 or 30.

I cut open the Breast of three Frogs alive, and the Heart beat from 30 to 34 and 40 Pulses in a Minute, the Throat moved 60 times in a Minute, which I take to have the same use as the Gills in Fish, *viz.* To help the return of the Circulation instead of the Lungs. The Lungs of a Frog stood inflated sometimes when the Breast was opened, and then were contracted and inflated again; by which I conjecture that they have not the use of the Lungs, but are rather Bladders for swimming.

I cut open the Breast of a Puppy alive, and found the Lungs filled with Air, but after a while they subsided and moved no more, but the Heart continued its motion a long time. I opened the side of another Puppy,

Puppy, and made a large hole for the lobe of the Lungs to come out, which they did, and continued full of Air, and were with difficulty put back into the Breast. By these Observations in the 2 Frogs and 2 Puppies I infer, That the Air is forced into the Lungs in Inspiration by the dilatation of the Breast, and not by the weight of the Atmosphere, which prest both Externally and Internally on the Lungs.

The florrid colour of the Blood and its mixture with the Chyle, may depend on the Circulation thro' the Capillary Vessels in the Lungs, without any mixture of the Air with it. In Inspiration the Blood is only coming into the Lungs, and Expiration only forces it out again, and the rest betwixt them is too small for any mixture of Air.

If it be objected that the Air-Vessels in Insects and Plants were of no use, if the Air did not enter the Blood and Juices of Plants that way; I answer, that in Insects, the want of the force of the Respiration is supply'd by the many Hearts in Insects, and their Air-Vessels were necessary for their Perspiration, since many of their Bodies are Crustaceous; as to Plants, they could not have any Fermentation in their Juices, nor supply of new Juice in the Spring, unless they perspire thro' their Air-Vessels, and Perspiration is only one use of Respiration, and the most imperfect. Dogs perspire  
little



little by Sweat, but much by their Breath; and 'tis found necessary in the motion of Water thro' the Pipes, to make Vent-holes for the Air, which would otherways gather into Bubles, and stop its Motion.

Frogs live all Winter without Respiration, but not without a Pulse, and this is like the Life of an *Embrio*, in which the Pulse can ciculate Humours slowly, thro' a little and short Body, but not thro' a great one, without the Help of Respiration.

*Some farther Observations about the Pulse and Respiration.*

**T**HERE are two Stops in the Pulse which make it very evident, the one at the Bone of the Wrist, the other at the Hand.

When the Pulse appears most evidently in the left Arm at the Bone, the Circulations runs moderately, and it beats near 70 or 75 Pulses in a minute, and at least under 80, and then it appears little below the Bone in the hollow Place.

When the Circulation runs very quick, the Pulse appears high above the Bone in the left Arm near the Hand, and there are above 80 Pulses in a Minute.

When

When the Circulation runs defective, or slower than in Health, it appears most below the Bone, and little above, I generally feel it against the Bone towards the hollow Part below.

If the Circulation runs upward 'tis above the Bone most, if downwards, below the Bone; as I observed in an Inflammation in the Leg, there were 120 Pulses in a minute, the Pulse was low, small, quick, frequent and hard, and most below under the third Finger.

The Pulse in a Woman with Child was 95, and it appeared most in the upper Place above the Bone of the Wrist in the left Arm, because the bigness of the Belly hinders the Descent of the Blood downwards, and causes it to reverberate or divert into the 2 upper Circulations; and this is the Reason the Pulse appears above the Bone in Women with Child in Evacuation or much Secretion, downwards towards the Circulation that way, but any Obstruction of the *Menses*, Piles turns the Circulation upwards, as in the *Green-Sickness* appears by the Pulse in the Neck, and pain in the Head; the Stop of *Hæmorrhagies* or spitting Blood breeds the Piles, and *è contra*, the Piles stop the *Hæmorrhagies*.

Inflammations in the Legs by their Pain, turn the Circulation downwards, and so do all the Pains and Inflammations in the Belly.

The

The Heart or *Punctum saliens* in an Egg  
 at 4 Days, beat 134 times in a minute, slower  
 than in a Chicken, the Heart in a Chicken  
 taken out of the Egg alive, beat 60  
 times in a minute.

When the Pulse in the *Punctum saliens* ceased,  
 warm Water made it beat again 20  
 times in a minute.

The true Measure of the Heat of Blood  
 is known by the Quickness and Frequency  
 of the Pulse, which the different degree of  
 Heat irritate; for the Heart is readily excited  
 to its Contraction by Heat externally as well  
 as internally, and by any external Pungent  
 thing, solid or fluid.

Sitting in a cold Church will sink the Pulse  
 10 Beats, and cold Water will stop the Pulsation  
 of the *Punctum saliens*.

A lenitive Purge sunk the Weight one  
 Pound and half, the Pulse sunk the 4 Beats;  
 the Breath also sunk with it.

In a *Diabetes* I observ'd the Pulse little in  
 the upper place, and most high under the  
 middle Finger.

We may observe a different Proportion  
 betwixt the Pulse or Respiration in different  
 Animals, the Motion of the Gills and Heart  
 in Fishes are near equal in Number, the Gills  
 move faster than the Heart; but in Frogs the  
 Throat moves 60 for 40 Beats of the Heart;  
 in Children the Respirations are near the 3d  
 part the Number of the Pulses.

He

He that will consider that the whole Blood of a Fish is sent to the Gills of Fish, and that some of it returns to the Heart again, the rest to the Pulses thro' the bronchical Arteries, which unite into one *Aorta* to carry Blood thro' the Body, will easily admit the Motion of the Gills opening and shutting, will return the Blood thro' the Veins from the Gills again, and all the Dilation and Contraction of the Gills will move the Arteries and Veins as much as the thoracing Vessels are distended and compressed by the Motion of the Breat ; and Dr. *Needham* in his Book, *De Formate Fatu*, makes the Gills to supply the want of the left Ventricle in the Fish ; the *Vena Cava* is 3 times as big as the Artery, from whence the Doctor conjectures that the thick Blood moves quicker in Fish than in Birds and Quadrupeds ; but the slow Pulse contradicts the Observation ; the Artery from the Heart goes *extra asophagum, ad mentum purgit, spargem ramos suos, ab singulos singula branchiis distribuit.*

Since in the Fish-kind the Artery goes *ad Mentum*, and the Motion of the Throat in Frogs is perpetual, tho' the Motion of their Lungs is slow : I therefore suppose that Motion analogous to the Lungs in other Animals, and to perform that Office of promoting the Reflux of Blood which the slow Motion of the Lungs cannot do.

Where



Where the *Medium* an Animal lives in is heaviest and coldest, there the Circulation returns most difficulty, and there is a Necessity that the Pump which supplies the Use of the Lungs should work as fast as the Pump of the Heart, which project the Blood, and the Pump of the Respiration equally move the Pump of the Heart. The Learned *Needham* observed, *Ut Venarie ad Arterias ita auricula ad Cor proportio major multo in pisceso genere, quam in aliis animalibus cernitur*: And the Return of the Blood from the Gills must reciprocally stimulates the Heart, but in Birds and Quadrupeds the Pump of the Heart moves quickest, and more frequently, which stimulates that of the Lungs very oft, and regulates its Celerity; it may be that in no Animals, the Heart-pump and the Respiratory-pump are synchomical; in Quadrupeds 5 Pulses of the Heart-pump are necessary to one Respiration. In Fishes one Pulse to one Motion of the Gills, or some unequal Number; to determine this exactly, we must observe the Motion of the Gills in Fish in the Water, which may be slower than I found out of the Water, and we must observe the Pump of the Circulation in Fish and Tadpoles by the Microscope. I mention this about Fishes, because the Circulation in them and Insects by the Microscope, is not yet discovered, but I have obliged an ingenious Hand to it for me; but what I have

men-

mentioned may excite some to inquire into the Circulation of other Animals, whose Pulse we cannot feel; and if we can find the natural Proportion betwixt the Pump of the Heart, and that of the Respiration, the Circulation in all Animals might be known by their Respiration. *Aristotle's* Opinion is true that the Heart is the Original of all the Faculties and Actions of the Body; the first Action is the Respiration, which the Pulse causes, and that not only helps the Circulation thro' the Lungs, but the Reflux thro' the Veins by the Pulse, Heat and Nutrimment, is conveyed to all the solid Parts. By the Pulse the Heart sanguifies and unites the new Chyle and Blood in the Lungs and all the Arteries; by the Pulse the secreted Humours are generated and forced thro' their secretory Vessels (for the secreted Humours are all compounded Liquors, such is the Urine, Lympha, Gall, Semen, and their Principles are united by frequent Circulations;) by the Pulse the Ferment is secreted into the Stomach, and the Spirits in the Brain; so that Sensation and voluntary Motions depend on the Heart and the Palpitation of the Brain; and all the best Philosophers will allow the Heart to be *Primum vivens* and *ultima moriens*. I mention these things to shew the great Benefit of knowing the Pulse; and to encourage the Industrious, I will assure

A a

them

them there are many curious *Desiderata*, both in the Pulse and Respiration yet undiscovered.

## CHAP. II.

*Concerning the simple Differences of the Respiration and irregular Respiration.*

**T**HERE are the same kind of simple Respiration, as I have described in the Pulse, and they are produced by altering the Animal Spirits, or the natural Quality of the Blood, or the Respiratory Organs.

A great Respiration and a small depend on a greater or less quantity of Air drawn in and breathed out, and then there is a larger or less distention of the Breast; a great Respiration depends on the Strength of the Spirits, a right Disposition in the Air-Vessels, a great quick Pulse, and great rarification of Humours.

A small Respiration depends on weak Spirits, some Impediment in the Organ, or a weak Pulse, and Blood little rarified.

A quick Respiration and slow is in respect of the time spent in Inspiration and Expiration; the Quickness, if joined with Greatness,



ness, depends on the Strength of Spirits, the good disposition in the Air-Vessels, the quickness of the Pulse, and great Rarification of the Humours, which the old Writers called the *Usus auctus*; the Quickness joined with debility is a Sign of weak Spirits, but hot Blood, which stimulates the Lungs, and it is in dying Persons, like the *Pulsus Formicans*, and accompanies it.

The Slowness of the Respiration depends on weak Spirit, or some Convulsion or Impediment in the Organs, or a slow Pulse, and want of Rarification in the Blood and Spirits, the Expiration is slow when the Lungs cannot drive the Blood easily out of the Lungs by reason of some Impedient above-mentioned.

The Respiration is either dense or rare: A dense or frequent Respiration depends on hot rarified Spirits, and hot *Cacochymia's*, or Effervescency of Blood, the Organs, are free and move easily, the Pulse is also frequent; as the Strength decays, the Breath is dense and small, the Density supplies the defect of Greatness.

A rare Respiration is when the rest betwixt several Respirations is long; and this depends on weak Spirits, some Constriction on the Organs, or a rare Pulse, and little Rarification of Blood and Spirits. The strong and weak Respiration depend on the great or small quantity of Spirits.



By the great, quick, dense, strong Respiration we know that the Circulation runs too fast, as we discern the same by the like Pulses; and by a small, slow, rare, weaker Respiration we discern that the Circulation runs too slow, which is evident by the like Pulse, and the natural Proportion of the Respiration is one to 5 Pulses; the Pulse shews us the quick or slow Circulation thro' the Artery, and the Respiration discovers that part of the Circulation which is the Reflux thro' the Veins, and if the Pulse injects 5 Ounces of Blood thro' the Arteries in 5 Pulsations, the Respiration forces so much to ascend in the Veins in one Breath.

An unequal Breath depends on the preternatural Motion of the Blood and Spirits, or the Compression, Coarctation, or Constriction of the Air-Vessels or Muscles convulsed, or irritation of the Organs, the Inequality in one Respiration, are the intermitting the *Imparcitita* when the beginning and ending of a Respiration differs: The *Dipnaea* is when the Respiration is doubled.

The systematical Inequality, are the intermitting, the intercurrent, or *Apnaea*, the deficient *Reciproca*, the *Caprisans*, the trembling, convulsory, itertorary.

The convulsive trembling Breath, is from the irregular Motion of the respiratory Muscles, and so is the Stop of the Inspiration or Expiration in Hysterics.

The

The *πνευμα μετεωρον*, or sublime Respiration is when the Muscles of the Thorax draw up the Shoulder very high; and this is occasioned by the Constriction of the *Bronchia*, which hinders Inspiration, or else by a great striving in dying People; by which they endeavour to promote the Reflux of Blood towards the Heart, and the Nostrils move, and the Breast falls suddenly.

The *πνυμα πενχωδες* is the Astmatick Stertor, in the *Orthopnea* we breath sitting, and the Respiration is *sublimis* and stertorary.

A *Dyspnea* is a dense and difficult Respiration in general.

A long Breath is a great and slow Breathing, a short Breath is small and dense.

A hot and cold Breath is called so in respect of the Air admitted, which feels hot or cold; the cold is small or rare when the Circulation begins to stop, the *Apnea* is in an obscure, small, and cold Breath.

There is *dūplex intro revocatio spiritus illi-  
dam, spiritus revulsio, spiritus intro relinqui-  
tur* in hysteric Fits.

The obscure Respiration is small and rare in dying Persons, like the intermitting Pulse or vermicular.

In the sublime Respiration, in Quin-  
sies, *Orthopnea*, Dropsy of the Breast and  
*Empyema*, the *Ala* of the Nose, and the  
Muscles of the Shoulders evidently move,  
and in dying Persons the same.

We can make our Respiration more rare or more frequent, more quick and slow, as we please; and for this Reason the Respiration is partly a voluntary Action, but when the Well-doers but interpose, the Respiration is mechanical, and spontaneous, depending on the perpetual Influx of the Animal Spirits into the Muscles of the Breast; and that is naturally altered by the Pulse, and the *Cacochymia* of the Blood and its different Heat.

In a *Rythmus*, the Inspiration is compared with the Expiration, and is also agreeable to the Age, Sex, Constitution; as *Hippocrates* observed, the simple Differences of Respiration being mixed, make these eight compound Respirations. 1. The great and quick. 2. The great and slow. 3. The small and quick. 4. The small and slow. 5. The great and frequent. 6. The frequent and small. 7. The rare and great. 8. The rare and small.

*Hippocrates* knew most the Species of Respiration, and mentions them, *Señ. 2. Lib. 6.* πνύματα σμικρα ἀραια, πνικνὰ μέγαλα, ἔξω μέγαλα, εἶσω μέγαλα, εἶσω σμικρα, ἔξω μέγαλα, ἔξω σμικρα: And he also mentions the Inequalities in the same Book. And in his Prognostics, he observes the Respiration as well as the Pulse, and says to breath easily is of great moment both in Health and Diseases.

'Tis

'Tis easy to count our own Respirations by the *Pulse-Watch*, and by the Motion of the Neck in Women and Children, we may see the Number of their Respirations; and if we lay our Hand on the Hypochondria, we may discern the Risings of the Belly in Inspirations.

The smallest and greatest Numbers of the Pulse are fatal; 7, 8, 9, 10, 11, 12 Pulses may be in one Respiration of the Physician; and these are frequent Pulses; the slow are] when one, two, three, four Pulses happen in one Respiration of a healthful Person by which the *Chinese* measure the Pulses of the Patient.

### C H A P. III.

*Containing the Natural and Non-Natural Causes of the alteration of the Respiration.*

**I**N Adults the Respiration is great and dense, like the Pulse, because the Blood and Spirits are then most rarified.

When the Heat is a little increased, the Respiration is greater; but if much increased, the Respiration is also more quick and dense: By Cold the Respiration is made

A a 4

less



less, by a greater degree slower, by the greatest degree rare, as the Pulse is.

All hot Countries, and hot Seasons of the Year, as well as Exercise, and hot Diet, and all the hot Regimen, increase the rarification of Blood and Spirits, and thereby accelerate both the Pulse and Respiration, and make them greater and more dense.

After Dinner both the Pulse and Respiration become more dense, 8 or 10 Respirations in hot Constitutions and 20 Pulses, and then there is not 1 Respiration to every 5 Pulses, as in Health, but two or three to one Respiration. The *Chinese* observe that Respirations in Children are 1 to 8 Pulses, in Health, their Bodies being small and soft, the whole Circulation depends on the Pulse, which, makes the efflux and reflux with less help of the Respiration, and in the Embryo without it, thro' a smaller Circle of the Infant's Body.

The Respiration in Children is very quick, as their Pulses are very frequent, more than in Adults, but both become more rare in Puberty and greater.

The declining Ages have a rare, slow, and small Respiration and Pulse, for want of rarification of Humours.

In sleep and quiet, we breath small, slow, rare, but upon Exercise the Respiration is dense, quick, and greater. In sleep the expiration seems greater than the inspiration,  
and

and more quick, because easier, and so it is after eating.

Hot Baths make a quick, dense and great Respiration, Cold Baths the contrary.

After Meat we breath less, but more frequent, as the Pulse is, and so do great-Belly'd Women, because the *Diaphragm* cannot descend easily.

If Heat makes the Pulse and Respiration great, quick, and frequent, and cold, rare, slow, and small; by these different Respirations we may know the hot and cold *Cachymia's*, as well as by the Pulse, and we may measure the Numbers of the Respirations by the Pulse-watch; as well as the Pulses in one Minute, for as the Pulse alters by the Age, Constitution, Passion, Sex, and Diet, so does the Respiration.

In Anger the Respiration is dense and great, and for this reason, Anger produces Asthma-fits.

In Love there is a *suspirium obliviosum*, the Sighing is made by drawing in much Air; and by a sudden Expiration of it, the great Inspiration is made to promote the stagnation of Blood, and the sudden Expiration is thro' forgetfulness, the Spirits being otherways diverted.

The Passions make the Pulse and Respiration unequal, by a convulsive Motion of the Muscles, or strait by the constriction on the *Aspera Arteria*.

The

The *Luctuosum Suspirium* depends on Grief, and is made with a noise, and is a great and rare Respiration with inequality, and revocation of Breath.

In Men the hot Temper of Blood and Spirits makes the Respiration, as well as Pulse, more quick, high, and dense, than in Women.

In cold Melancholy, the Respiration is small, and rare; and cold, as well as in the Old and Weak.

In Sanguine Tempers the Pulse and Respiration are great, slow, and full.

In the *Bilious* Tempers the Pulse and Respiration great, and frequent, and quick.

In the *Atrabilarian* and Scorbatic Constitutions the Respiration is more dense, great, and quick, than in the Sanguine, and the pituitous or serous, or acerb Tempers, have a small, rare, and slow Respiration.

The Breath has the same inequality as Pulse, in putrid Humors; the Pulse and Respiration is sometimes quick, and sometimes slow, sometimes strong, and sometimes languid, according as the Circulation is oppressed or eased: The corruption of the natural Heat or Spirits by putrefaction, makes the Pulse and Respiration weak, and the Heat not great.

It may be observ'd, That where the Pulse is very small, quick, and frequent, the Respiration.



spiration may be rare, as in Fears, Cares, Anxiety; and in some Fevers the Pulse is quick, small, and frequent, but the Respiration slow: The reason of this is the smallness of the Pulse, which Injects little Blood at a time into the Lungs, which easily runs out; and in some of the Cases mentioned, the natural Velocity of the Circulation is stopt, thro' defect of Spirits, or constriction on the Heart, or oppression on the Brain or Lungs. The Respiration usually rises and falls by the external Causes, as the Pulse does, and this proves that they were designed for the same use, to promote the Circulation.

When the Pulses is about 80, the Respiration is about 20; and when the Pulse rises above 80, the Respirations rise with it, so that at 90 Pulses the Respirations are about 30.

The Cold Weather stops the Pores, by contracting the Skin, and so keeps in the Perspirabile, which is rarified Air, and thereby raises the Pulse and Numbers of Respiration; but the open Weather relaxes the Skin and Pores, to let out the hot Air mixed with our Humours, and thereby sinks the Pulse and Respiration, as other Evacuations do, by Stools and Urine; but I cannot find that the Pulse and Respiration are considerably affected by the different Weights of the Air, because they are dense and rare in the same state of the Barometer,  
and



and do not change with it. After large Drinkings we breath short and difficultly, because of the fulness and oppreffion in the *Pneumatick* Veffels.

After immoderate Eating the Pulse is greater, and the Respiration lefs, because the *Diaphragm* is hindred in its Motion, but it is more frequent; a lefs and frequent Respiration helps the Circulation as much as one greater and more rare.

The Respiration is much ftopt in Love, Studies, Bufinefs of great Concern, and the intermiffion of Breathing produces Sighing, and Hyfterics Breath flowly in the Fits, which ends in a Sigh. The Fat breath flow, because their Infpiration is difficult and oppreffed.

Sneezing and Sighing helps the Circulation. Blowing into the Lungs helps Animals fuffocated; the ftopping the Breath, ftops the Circulation.

## C H A P. IV.

*Concerning the alteration of the Respiration  
in Diseases.*

**V**ery few Respirations are describ'd by our Old Writers, but since the Pulse and Respiration have the same Causes and simple differences, it is easie to describe the Respiration by the Pulses; thus, the Pulse is great and rare in the Lethargy, and so is the Respiration.

*Note,* That the Diseases in the Heart and Lungs belongs to the general Circulation, but not the Diseases of the *Thorax*, because all the Blood passes thro' their great Vessels, and it is moved by them, as the chief Circulatory Organ.

I have divided the Respirations, as well as the Pulses, according to these five Circulations. 1. The general. 2. The *Cephalic* Circulation. 3. The *Thoracic*. 4. The *Cæliac*. 5. The *Illiack* Circle; and I have observ'd which belong to the exceeding and deficient Respirations.

The exceeding are the great, quick, strong, frequent, equal Respirations.

The

The deficient are the small, slow, rare, weak, unequal Respirations.

When the Pulse is hard, there is a difficulty of Breath, because the fizy Blood stops the *Pneumonic* Vessels as well as the other Arteries, in which it produces a hard Pulse.

# T A B. I.

*Containing the alterations in Diseases of the general Circulation.*

*These Diseases have an exceeding Respiration and Pulses, and an accelerated Circulation.*

- |                   |                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <i>Plethora.</i>  | Has a purfive full and rare Breath, as great as the Pulse is.                                                                        |
| Hot Cacoehymia's. | Heat makes the Respiration dense, quick and high, from fourteen to thirty in a Minute.                                               |
| <i>Ephemera.</i>  | A Feverish Respiration is great, quick, frequent, equal, above 30 in a minute.                                                       |
| Putrid Fever.     | It has the same as the <i>Ephemera</i> , but the Breath and Pulse are unequal, and difficult, and slow, whilst the rigour lasts. The |

- Tertian.* The Respiration is vehement, quick, and frequent in the Fits, but slow and rare at first.
- Quartan.* The Breath and Pulse are more slow and rare, than in the *Tertian*.
- Quotidian.* The Breath is less, and rarer than in other Fevers, because the Blood is less rarified, and the Circulation slower.
- Causus.* Has the most dense, quick, and greatest Respiration, with a burning Breath.
- Hectic Fever.* Has a small, quick, difficult, frequent Breathing in the Fits.
- Malignant Fever.* The Breath is small, weak, frequent, unequal, as the Pulse is.
- Plague.* Most weak, small, frequent, unequal, as the Pulse is.
- Small Pox.* Small, quick, frequent, difficult, or oppressed Breath at first.
- Hæmorrhages.* Great, quick, frequent and soft, as in *Ephemera's*.
- Inflammations* The Breath is vehement, great, quick, frequent.

The



**Pains.**

The Breath is great, quick, dense, or small and dense.

**Defluxions.**In these there is an Effervescence, which makes the Pulse and Respiration the same as in *Ephemeræ's*, and when the Pulse is 95 in Defluxions, the Respirations are about 30 in a minute.**Suffocating  
Catarrh.**

Unequal, quick, frequent, above 60 Respirations in 120 Pulses.

**Obstructions.**

Great, quick, frequent, at first.

**Scarlet Fever.**

The Pulse is quick, weak, frequent, and so is the Breath, quick, frequent and anhelous.

*These Diseases have deficient or unequal Respirations and Circulations.*

**Atrophy, or  
want of Blood  
and Spirits.**

Small, flow, languid Breath.

**Cold Caco-  
chymia's.**

Small, flow, rare, or small, languid, frequent.

**Profuse Eva-  
cuations or  
Hæmorrhages.**

Languid, flow, or small, quick, frequent Breath.

**Polypus.**

Obscure, or intermitting, or difficult Breath upon motion. Quick,

Crookedness  
in the Spine:  
*Cachexy.*

Quick, frequent, and *Asth-  
matic* Breaths.

The Pulse and Respiration  
weak and frequent, upon  
Motion anhelous, and more  
frequent.

---

T A B. II.

Containing the alterations of the *Respira-  
tions* in the *Diseases* of the *Cephalic*  
*Circle.*

*These Diseases have exceeding Respirations.*

Head-ach.

**G**reat, quick, frequent,  
as the Pulses be, or  
small and frequent.

*Mania.*

The Pulse in the *Mania* is  
hard, by the tension, and the  
Breath is difficult, unequal,  
small, quick, frequent, con-  
vulsively moved as the Pulse  
is.

*Delirium.*

The Respiration is great  
and rare, the flux of the Spi-  
rits into the respiratory Mu-  
scles is diverted to pursue the  
mad Idea's.

B b

Small,

**Giddiness.**

Small, unequal, rare, or frequent intermitting Breaths

**Epilepsie.**

Unequal, rare, slow, or frequent and less.

**Catalepsis.**Great, rare, slow, as in *Lethargies***Apoplexy.**

Small, weak, inordinate Breath, intermitting, rare, slow, small, or quick, frequent, great, unequal, stertorous (if dangerous) and the numbers from 35 to 40, the Pulse 90 in a Man of 80 Years, the Breath is great quick, frequent, by the Fever and Inflammation joined with it. In a great *Apoplexy* the Pulse and Breath are small, languid, rare, unequal.

**Catarrh.**Great, quick, frequent Pulses and Breath, as in *Ephemera's*.**Phrenitis.**

The Pulse is small, frequent, hard and quick, the Breath is sometimes great and frequent, in others great and rare, trembling Convulsions.

**Paraphrenitis.**

Small, frequent Breaths, or great and rare.

**Convulsions.**

This by the respiratory Muscles, stops the Breath, keeps it in, and doubles it, or blows

These

Hysse

See Book gous

Melas Hypoc

blows it out violently, and causes a Super-inspiration, Protension, and all other Irregularities in breathing, intermission, inequalities, as *Respiratio Elisa, Intercisa, Offensans, Introre vocata, retracta, Suffocatoria.*

*Quinsie.*

The Breath is small and dense, and the Inspiration is difficult by the straitness in the Throat, which makes the Breath small, and sublimis; the Fever and Inflammation make the Breath dense.

*These Diseases have a deficient or unequal Respiration.*

*Hysteric Fits.*

The Respiration is small, and rare, and sometimes dense, when the Muscles of the *Thorax* and *Diaphragm* are convulsed, the Air cannot be expelled.

See *Hippoc.*

Book of Vir-  
gous Diseases.

*Hippocrates* imputes these Fits to some Cause which hinders the efflux of Blood from the Heart.

*Melancholia,*

*Hypochondriaca*

In *Phrensies* and *Melancholia* lies the Breath is great and rare, or small, weak, slow.



*Fainting.*

The Respiration is small and obscure, or deficient, small, weak, frequent or rare.

*Hydrophobia.*

The Breath is small, unequal, convulsively strangling.

*Incubus.*

Has an oppressed Breath, by the fulness of Chyle or Blood in the Lungs, 'tis weak, small, obscure.

*Sopors.*

In all sleepiness, the Pulse is undous, and Breath slow and rare.

Debility of  
Spirits to move  
the Thoracic  
Muscles.

Has a trembling Breath, or small, weak, slow, obscure.

*Lethargy.*

The Respiration is unequal, weak, rare, slow, with a high and long Inspiration, which is sometimes reduplicated. The oppression on the Brain by sily Blood hinders the Flux of the Animal Spirits into the Muscles of the Heart and Thorax; and this makes the Pulse also great, slow, undous, the Breath is great to force the reflux of Blood, which

which is stopt ; but the Oppression is the Cause of its rarity ; but if the Fever be high, or there be a Pain or Inflammation in any part of the Breast, or Belly, besides the *Lethargy*, the Respiration will change to small, and dense, for so it happens in *Pleurisies*, *Quinsies*, *Cholics*, joined with a *Lethargy*, as *Galen* observ'd; and by this Instance, we may observe how much a mixture of Diseases will alter the Pulse and Respiration, natural to any Disease.

*Palsie.*

Small, weak, rare, or frequent Pulses and Respirations.

## T A B. III.

*Containing the Alterations of the Respiration in Diseases in the Thoracic Circulation.*

These Diseases have an exceeding Respiration, Pulse, and Circulation.

Inflammations of the Breast or Pleurisy, or *Peripneumonia*.

**I**N all Inflammations of the Breast and Belly, which affect the Organs of Respiration, the Breath is small and dense: In a Pleurisy the Breath is small, because the Pain hinders the Dilation of the Breast, and the Fever makes it quick and dense: In a *Peripneumonia* the Breath small, and dense, and stertorous, with an *Orthopnea*; the Difficulty of Inspiration makes it *sublimis*, the Density depends on the Fever and Inflammation, and the Breath and Pulse is great and frequent in the beginning.

The

Pains of the  
Breast.

The Breath is small, quick, and dense, because Pain irritates the Pulse and Respiration.

*Empyema.*

The Breath is small, because the Matter fills the Thorax; 'tis also dense, because of the *Hectic* Fever, whilst the Matter is ripening the Pulse and Respiration are small and dense, but when 'tis ripe the density remits, but when it breaks, the same *Dyspnea* returns.

*Hæmoptoe.*  
Cough.

Quick, frequent, painful.  
Quick, frequent, unequal Respiration; as in *Desfluxions* and *Ephemera's*.

*Note, That Hippocrates mentions the σπασμα ἀσπρίν, or dissection of the Trachea; and that is the occasion of the Hysteric or Pneumonic Asthma, with a Fever and bloody Spitting for 14 Days at first.*

*Hysteric Asthma.*

I counted 34 Respirations, and about 100 Pulses after the Fit; they complain of pain in the Legs and Head, by the Stop of the Circulation there; in an *Orthopnea*, and in an *Hysteric Asthma*, there were but 3 Pulses to one Respiration.



Luxation of  
the Spine.

The Respiration is small  
and dense, with a Stertor.

*Note*, That Porters and Runners are very  
subject to Asthma's, as well as Ruptures,  
which are both occasioned by Straining.

*These Diseases have deficient Respirations.*

*Pulmonic  
Asthma.*

In this Asthma the Breath  
is rare, because of the Con-  
striction of the *Bronchia*, and it  
is drawn with difficulty and  
very high, and the Brain is  
oppressed by the Stagnation  
of Blood there, and a purfive  
Breath hath 9, 10, 12 Respi-  
ration in a minute; but an  
Asthma-Fit but 7 or 8: 13  
Pulses to one Respiration in  
the same Person; the Respi-  
rations is laborious, high and  
rare, weak, unequal, inter-  
mitting, oppressed, as the  
Pulse is, there is a mild *He-  
ctic* Fever, Thirst, dry Cough,  
Faintness, a difficulty of ly-  
ing on the same side; as the  
Dropsey, and a pain at the  
*Cartilago Eusiformis*, swelling  
in the Legs, blackness in the  
Face: This may thus be di-  
stin.

Dropsey of the  
Breast, Pulses  
98, the Respi-  
ration 30 in a  
minute.

stinguished from the Asthma, for which 'tis commonly mistaken. *Hippocrates* commended a *Paracentesis* on the third Rib, and Scarification in the inferiour Parts swelled.

The growing A *Dyspnaea*, and Weight, of the Lungs and pricking Pains of the to the Side of Sides.  
 ter an Inflammation.

Obstruction, Unequal Breath, small and Constriction, dense, laborious, *sublimis*. Oppression, of the respiratory Organs.

*Schirrus* in the Small and dense Respiration, Lungs or *Tubercula*. *Galen* mentions the laxity of the Diaphragm in a *Athleta* who could not breathe but when he was girt with a Girdle ; the strong Man who was used lift great Weights, complained much of his Breath, when he had strain'd hard.

*Palpitation.*

An unequal Breath and Pulse, great, small, slow, quick ; if from a Tumour a constant unequal inordinat Pulse and Breath the Heart is convulsively moved. In

In Diseases of the Lungs the Respiration returns not to its natural Numbers till Phlegm is spit up ; but the preternatural Numbers in the Pulse sink sooner ; as in the Asthma, as soon as the Effervescence sinks: The Night before the Asthma, Pulses 98, Respirations 25, both were Signs of great Rarification of Humours.

*Note*, that *Hippocrates* gives this Prediction in his Book of inward Affection, *Chap. 3.* the *πλευμαρραγίε*, or ruptured Lungs, continue so till they die ; and they must avoid acrid, acid Salt, and fat Meats and Labour.

---

#### T A B. IV.

*Containing the Alterations of the Respiration in Diseases of the Cæliac Circulation.*

*The exceeding Respirations.*

|                    |                                |
|--------------------|--------------------------------|
| <i>Cardialgia,</i> | <b>S</b> MALL, quick, frequent |
|                    | Breath and Pulses.             |
| Corrupt Meat       | Small, unequal, and quick,     |
| or Choler.         | frequent. Small,               |

*The Pica.*

Small, languid, frequent, unequal Pulse and Respiration.

*Tumour in the Stomach.*

The small and frequent.

*Tympany, Jaundice.*

Quick, frequent Respiration, and small and frequent Respiration.

*Colica Biliosa.*

Quick, frequent and small Respiration and Pulse.

*Cholera, Dysentery, Diarrhea.*

The Pulse is quick, frequent, small, and the Respiration must be like it.

*Dropsy, Obstruction of*

The Pulse is small, frequent, unequal; and so in the Breath, difficulty of Breath is by hindring the Descent of the Diaphragm in these Diseases.

*Spleen, Black Jaundice.**Inflammation of the Liver**or Muscles of the Belly.*

Frequent and difficult Breath, the Inflammation makes it frequent.

*The Diseases have a deficient Respiration or unequal.**Hiccough,*

Has convulsive Inspiration from some irritating Matter which stimulates the Stomach and Diaphragm to a violent Contraction.

Be-



A Tumour, Because the *Viscera* are  
 Obstruction of moved or shaken, or com-  
 the Liver, pressed by the Diaphragm  
 Spleen, Sto- and Muscles of the Belly;  
 mach, Inte- therefore any Tumour of  
 stines, or Pain, them makes the Breath small,  
 Inflammation quick and frequent, dropical  
 of them, or Water, Fulness of Meat,  
 Inflammation Wind in the *Colon* or Wo-  
 of the *Hypo-* men with Child.  
*chondria*.

Weak Sto- Small and weak Breath.  
 mach.

*Boulimia*. Rare, slow, small, languid.  
 Oppression by Slow, small, languid, rare.  
 Meat or Hu-  
 mours.

Sick at Sto- Languid, small, slow, rare.  
 mach.

*Note*, That a Dropsy from the Inflamma-  
 tion and Obstruction of the Liver has a Fe-  
 ver attending it, which makes the Pulse and  
 Respiration quick, frequent and hard.

T A B. V.

*Diseases in the Renal Circulation or Illiac,  
which alter the Respiration.*

Strangury by  
clods of Blood. **T**HE Pulse is small,  
weak, frequent, and  
so in the Respiration.

Stoppage of  
the *Menstrua*. *Dyspnea*, quick, and fre-  
quent.

*Gout*.

The Pulse is as in Inflam-  
mation, Pains and Defluxions  
at first, and so is the Respira-  
tion quick, frequent, but that  
sinks with the Pulse; and in  
Old Men I have counted but  
74 Pulses after 14 Days, but  
at first, in the beginning of  
the Pain, 90 Pulses in a mi-  
nute.

Inflammation  
of the *Kidneys*. Quick, frequent, and ve-  
hement, as in all Inflamma-  
tions.

*Febris alba*.

Quick, frequent, and small  
as the Pulse.

Old *Gleet*.

Small, weak, frequent, as  
the Pulse.

*Note,*

*Note,* That the Pulse in the *Gout* appeared not about the Bone of the Wrist in the right Arm, but most below it, and it was not great, but quick and frequent, the *Gout* was in the left Hand, which drew the Pulse higher above the Bone in that Hand, but when the *Gout* is in the Feet, the Pulse appears below the Bone most, because the greater Circulation tends downwards.

*Note,* That if we feel the Pulse below the Bone in the left Arm, as oft as we make a full Inspiration, the Pulse will appear evidently accelerated by it unequally, with an intercurrent *Ictus*; which manifestly discovers the Use of the Inspiration, to propel the Blood in the Veins to the Heart, where it irritates a more frequent Pulse, but during the Expiration the Pulse appears equal.

I measured the Belly by a Girdle fasting, round the Body over the Navel, and found that by an Inspiration, the circumference was near 3 Inches larger than in an Expiration. I measured the Breast by the same Girdle, the end running thro' a buckle, and I found that in an Inspiration the circumference was larger near two Inches; by these Experiments we may discern the quantity of the Air inspired, and the effect of the depression of the *Diaphragm*.

Small,

- Menstrual Flux* Small, weak, frequent Respiration.
- Diabetes.* Weak, quick, frequent Pulse and Respiration.
- Fluor albus.* *Dyspnea*, small and slow Breath.
- Anasarca.* A dense Respiration after Eating, with Thirst.

*Elephantiasis Pulsus pusilli, graves, tardi, tanquam per canum, vix se moventes Ariteus.* Galen describes it small, languid, slow, rare, after it has continued long, but frequent at first, and the Breath is difficult.

*Scurvy.* Both the Pulse and Breath in the Scurvy is unequal, intermitting, by the unequal heat of Blood, or irregularities of the Animal Spirits, and both are also small and weak, tho' sometimes great and strong.

*Note, That in the Scurvy, Dropsy, Hysterics, Chlorosis, the Blood is viscid, crude, or grumous, unfit for its Circulation thro' the Lungs, which breeds a Dyspnea.*

Since in most External Diseases, the Blood circulates most slowly in the habit of the Body, I think they ought to be referred to the slowest Circulation, which is the *Illiack*, and the Pulse in the *Elephantiasis* and *Scurvy* agree with this Notion; and if we reflect  
on



on the first formation of Parts, the Blood is first, after that the Heart, and the parts of the *Cephalic* Circulation appears, as the Brain and Spinal Marrow; the next are the parts in the *Thoracic* Circulation, as the Lungs; after this the parts in the *Celiac* Circulation, as the Liver, Stomach and Guts; the last are the Extremeties, and the habit of the Body. Thus the four several Circulations succeed one another, the smallest and quickest Circle first, the greatest and slowest last, but the Blood represent the general Circulation.

---

*A Table of the Numbers of Pulse and Respiration, as they are altered by the natural Constitutions and external Causes in a Minute.*

|                                                               | Pulses. | Respirations. |
|---------------------------------------------------------------|---------|---------------|
| <i>Atrabilarians</i> three<br>Pulses to one Re-<br>spiration. | 90      | 30            |
| Salt Tempers a-<br>bove three Pulses<br>one Respiration.      | 85      | 25            |
| Choleric Tempers<br>four Pulses to one<br>Respiration.        | 80      | 20            |

Sanguine Tempers

five Pulses to one  
Respiration.

75

15

Pituitous Tempers

seven Pulses to  
one Respiration.

70

10

Serous Tempers 13

Pulses to one  
Respiration.

65

5

*Acerbe* or cold Me-lancholy twenty  
to one.

60

3

The Respiration is more evident than the Pulse, and as by the Pulse we may observe how much or little Blood is injected into the Artery, and how oft, rarely or frequently, more forcibly or weakly, or unequally; so by the Respiration we know how the reflux of the Blood is made thro' the Veins. In a great, quick, frequent Respiration the Blood returns very fast, but in a rare, slow, small, and the unequal Respiration, it returns very slowly; and when the Blood returns quick, the numbers of the Respiration taken by the Pulse-Watch, are near 20, 25, or 30; when too slow, near 10, 5, 3, as appears in the Table; the Pulse in Health is 75, and the Respiration 15 or thereabouts.

By the Numbers of Respirations in a Minute, we may discern the increase or decrease

crease of the Disease of the Lungs, and the Diseases of the Head and Belly, and those in the general Circulation.

The Diseases of the Head alter the Respiration and Pulse, by sending too many, or too few Spirits into the Muscles of the Heart, and *Thorax*, and by transmitting their morbidick Matter thro' the Jugulars.

The Diseases of the Belly alter the Pulse and Respiration, by hind'ring the descent of the *Diaphragm* in Inspiration, and by transmitting their Morbidick Matter thro' the *Porta* to the *Cava*.

The Diseases in the general Circulation transmits their Cacochymia's in every Circulation to the Lungs to affect them, and the *Illiac* and *Renal* Circle affects the Lungs, by the means of the general Circulation or Nerve.

As the *Chinese* measure the Diseased Pulses of the Patient by the healthful Respiration in the Physician, so we may also measure the diseased Respirations in the Patient by the healthful Pulses of the Physician, and in very quick Respiration, I have observed but one Respiration in two Pulses, and as the Patient grew better, one Respiration to 3 Pulses, after a longer time four Pulses to one Respiration, by which degrees, I observed that the Patient was near recovering of the *Hysteric Asthma*.

By

By observing the Pulse in Diseases, we find how the Blood is projected; but by the Respiration accelerated, we discern the quick return, and by its deficiency the slow return, therefore as soon as I have taken the Number of the Pulse, I always observe those of the Respiration, especially in Diseases of the Lungs, which may be easily done, by a Pulse-Watch, and that alone can discover the disproportion the Disease makes betwixt the numbers of the Pulse and Respiration: Since the Pulse and Respiration both serve the Circulation of Humours; by the similitude of the Respiration we may guess at the numbers of the Pulse, and its simple Differences.

An accelerated Respiration is attended with accelerated Pulses, and a deficient with deficient Pulses; and thus we must find the Pulses in diseased Animals; and also by their natural Temper, by the proportion of the natural number of their Respirations to that of a healthful Man; all Creatures who have above 15 Respirations in a Minute, have quicker Pulses and Circulations than Men; and they who have fewer, have a slower Pulse and Circulation than Men, and are cooler Animals.



## CHAP. V.

*The Prognostications by the Respiration.*

**A** good and natural Respiration is a Sign that the Animal Spirits, Blood, and respiratory Organs, are in a healthful State; and that the general Circulation thro' the Lungs, and the reflux of Blood thro' the *Cava*, and the Secretions thro' the *Viscera* are well performed; and all this we know by the natural Numbers.

When the Blood and Spirits have a great Morbifick Alteration, the Respiration as well as the Pulse alters by an Excess or Defect in their natural Numbers, which will appear by the *Pulse-Watch*. The most moderate Numbers of our Respiration conduce most to a healthful Circulation; in a very dense Respiration, the left Ventricle is suffocated by too much Blood; and in a very rare Respiration the left Ventricle wants Blood.

When the Pulse and Respiration are very dense or very rare, they are small and weak.

Great and vehement Respirations are signs of Strength, and a small of Weakness.

A quick Respiration is a sign of Heat and Rarification of Blood and Spirits.

A dense Respiration is a sign of a great degree of Heat and Rarification of Blood and Spirits, a rare Respiration of cool Blood and Spirits, or some Impediment in the Organ.

An unequal Respiration is a sign of some disorderly Motion of Spirits, or some Impediment in the Lungs, or respiratory Muscles.

That Apoplexy is most dangerous in which the Respiration is very stertorous, or intermits, or is violently drawn; this depends on the great Oppression on the Brain to intercept the Spirits.

A Respiration great and rare, is a sign of a great Lethargy; a rare and vehement Breath is a sign of some sort of Delirium; in Phrenesies the Head is full of florid Blood; in Lethargies, and Apoplexies of sily Blood; in Melancholy, of a glumous Blood.

A high, rare Wheezing obstructed, and laborious Respiration is sign of an Asthma; in the hysteric Asthma the Respiration is frequent.

A laborious difficult Respiration, and frequent feverish, is a Sign of a Suppuration, or *Empyema*.

A Breathing stopping suddenly, is a sign of a Convulsion in Fevers; this *Hippocrates* calls, *πνῶμα πρὸ κοπῆς*, a Delirium joined  
C c 3 with

with a *Dyspnea* in a continued Fever, is usually fatal.

A small and dense Respiration is a sign of a Pain in the respiratory Organs; or of an Inflammation in some Parts which are moved by the Respiration, as in the Muscles of the Breast, Neck, Throat, Diaphragm, Muscles of the Belly, or the *Viscera* in the *Hypochondria*.

A great and frequent Inspiration is a sign of some Inflammation.

To blow cold from the Mouth and Nose, is a sign of the Circulation almost stopt.

A long Breathing cures Oscitation, because a great Inspiration promotes the Circulation.

A Hiccough is cured by holding the Breath, which keeps the Diaphragm distended and depressed.

A Respiration with sighing is an ill sign in Fevers, because we sigh to promote the Circulation.

An easy Breathing is a good Sign in all Fevers, as a sign of an equal Circulation, when the Respiration becomes more rare and slow, 'tis a sign that the Fever remits.

The doubling the Inspiration and Expiration is an ill Sign.

An unequal Pulse continuing long with a shortness of Breath, is a sign of a *Polypus* and sudden Death.

A great Respiration joined with a rare, is a sign of Strength, cool Blood, and long Life.

These Respirations are Signs of Death; the cold, the rare, small, very long, very quick, the high, laborious, the stertorous, the *Alæ* of the Nose, and Muscles of the Shoulders move in an *Orthopnea*, and the Breast falls suddenly in Expiration.

When there is a great Breathing out, and less inwardly, or a little out, and great inwardly, Death is nigh.

Weakness is when the Animal Spirits cannot manage the Circulation, by Pulsation and Breathing, and when the voluntary Motions are weakly performed.

A Looseness or taking a Purge, or Vomiting is injurious, during the shortness of Breath in a *Asthma*.

The Pulse and Breath is very quick in dying Persons, with a Super-inspiration sometimes, which is a great Inspiration, and at last the Respiration very rare.

By the use of hot Diet and Exercises, and want of a full Perspiration, or other Evacuations, the Pulse and Respirations are kept up to higher Numbers; but they gradually sink and rise again, in a sort of Circulation; and the Changes of Air and its external Pressure, may incline to Diseases, but does not certainly produce them, un-



less the internal Causes correspond with it.

*Aritens* calls the Dropsy of the Lungs a Species of the Asthma, and mentions its chief Symptoms, *Spirandi, Augustria, Tussis, Vigilia, & Caliditas*; he says they die in a Years time, and those Dropsies which begins in *Autumn* die next Spring or Summer; but they which begin in Winter die in *Autumn*; this ends in an *Anasarca* or *Ascites*; they cough much, spit little.

The Indications from the Pulse and Respiration, which are small, frequent, infirm, as *Aritens* describes, is to remove the Cause which extravasates the Serum into the Thorax, and to evacuate the extravasate thence, that the Oppression on the Heart and Lungs may be removed: I have observed that a *Polypus* in the Heart is occasioned by Melancholly, and that a *Polypus* occasions the Extravasation, and not any ferous *Cacochymia*, and for that we must bleed freely more than in other Dropsies, and Vomits do most good to promote the Circulation, and Steel and volatile Salts at first. The Pulse is great, strong, intermitting in the beginning, and so must the Respiration be; but after some time the Pulse and Respiration are small, unequal, intermitting; and then Vomits, Opiats, Diureticks, are most proper, and Purges evacuate the Serum; but since the *Polypus* is rarely cured, which is the original Di-

Disease, the Dropfy cannot by a *Paracentesis*, nor any Method.

'Tis a great Mistake in *Aritæus* to affirm, That Astmatics preserve their Lives by Works near the Fire, which dries and heats the Lungs, because all Works near the Fire disagree with Asthmatics, and so does the Dust of Metals and their Fumes: This Mistake proceeded from *Artaeus's* Opinion, That a cold and moist Humours produced the Asthma, and that it must be cured by hot Medicines, which is a notorious Mistake; and the same was made in all other hot windy Diseases by most of the old Writers.

These Symptoms he mentions, depend on the Effervescence of Humours; hot Wind in the Stomach, heat in the Night, desire of cold Air, *Pulsatus, parvi, crebri, depressi*, (as *Arietus* describes it) *Vigilia*, which is usual a Night or two before the Fits; in the Fits, Sleepiness, dulness in the Head, like a Lethargy.

These Symptoms of the Asthma in *Artaeus* depend on a stopt or slow Circulation, great quantity of pale Urine, slowness to any Motion, heaviness of the Breast, difficulty of Breath in Motion, Cough and Hoarseness, sharp Face and Nose, Strangulation; as appears by the redness of the Cheeks, prominent Eyes, pale Face, fainty Sweats in the Fore-head and Neck, spitting of a slimy Lympha, small Legs, Strangulation

lation in extream Fits, by stopping the Pulse and Respiration, rare Respirations, obscure Voice, Stertor.

1. Asthmatics must preserve their Lives by preventing the Effervescency by Water-Drinking, and frequent, lenitive Purges, and cold Baths, avoiding fermented Liquors, too much Bread.

2. By helping the Circulation by moderate Exercises; Riding especially, and Friction, or bitter Thea, or squill Medicines: For what raises the Circulation ought to keep the Body open in Asthma's, such are squill Medicines.

Since an Animal cannot subsist one minute with Respiration; 'tis plain, that it preserves Life, which consists in the Circulation of the Blood; and since both the Pulse and Breath are altered alike by the same external Causes, and they keep their natural proportion of numbers in Health; I conclude that the Circle of Life is maintained by the Pump of both Organs moving proportionably.

A  
LETTER  
Concerning the  
RUPTURE  
IN THE  
LUNGS,

Which is the Cause of the *Asthma* in Mankind ; and of the broken Winds in Horses ; and of the *Croke* in Hawks. With the palliative Cure of those several Diseases, and their Symptoms.

---

Ἐδόκει πνευματώδης εἶναι. Hipp. Lib. vij.  
Epid. pag. 313.

---

L O N D O N :

Printed for John Nicholson at the King's Arms in Little Britain, and Henry Clements at the half Moon in St. Paul's Church-yard, 1710.



J

I

in  
th  
th  
th  
p  
fo  
li

R

R

R

R

R

R

R

R

T O

JOHN THORP, M. B. *Oxon.*

Fellow of the *Royal Society.*

S I R,

I Have frequently reflected on the Assertion I formerly made in my Treatise of the *Asthma*, that there was a Rupture in the Lungs in its Air-Vessels, which gives the first occasion to the *Asthma*; and that all the Symptoms growing afterwards, had their first rise from that Rupture: For the proof of this Assertion, I will mention these following Reasons, which induce me to believe there is a Rupture.

1. I shall prove that such a Rupture is possible.

2. That it appears in all broken-winded Horses, and in all crooked Hawks; in some Men and Children.

3. That the Old Physicians did use the same Medicines for the *Asthma*, as they did for inward Ruptures.

4. That

4. That *Hippocrates* did acknowledge that there was a Rupture in the Lungs, which caused the *Asthma*.

I will after consider the Cure of the *Asthma*, supposing it to be a Rupture.

I will also afterwards collect the several Cases of the *Asthma*'s Symptomatical, which I can meet with in *Hippocrates*'s Writings.

At last I will give you my Method or Regimen for palliating the *Asthma*, which is the cold Regimen. And I have also given you an Extract of the Method the Farriers find most useful to broken winded-Horses; and the Method the Falconers prescribe for managing crooked Hawks.

1. That a Rupture may be produced in the Lungs, by a violent Inflation, is evident, by the Experiment of Mr. *Snape* Farrier, pag. 95. where he says, I have often blown thro' the Wind-pipe with such violence, that I have broken off the small Branches of it, and with the same Wind have rais'd little Bladders in the outward Skin of the Lungs; by this Experiment 'tis evident, that the *Bronchia* may be broken off from the outward Skin, and then little Bladders will rise, upon the outward Skin of the Lungs, which contain Air.

2. That there is such a Rupture, as I have mentioned in broken-winded Horses, I am certain, for I have dissected five of them,  
and

and in ever one of them I found such Bladders full of Air upon the Exterior Skin of the Lungs; and there appeared not any other evident Cause of the broken Wind in those Horses, nor no *Polypus*, nor Corruption about the Lungs, or in its Vessels, nor no Water in the Head, nor Injury done to the *Diaphragm*. This Rupture of the Lungs was so evident, that all that were about those Dissections, as well as my self, did conclude, That since those Air-Bladders appear'd in all the broken Winds, they were the true Cause and Original of the Disease; for in all other respects, the Lungs did appear sound; and had no *Tubercula*.

The Cause of this Rupture may be either hard drawing, or straining the Breath, or a vehement Cough; for any of these Causes occasion the holding the Breath and Inflation of the Air, or its violent Explosion, by which the *Trachea* is broke off from the external Skin which naturally closes its Pipe.

I pierc'd a hole into the side of the *Thorax*, by striking the Farrier's flume betwixt the Ribs, and no Air, nor Humours came forth, neither did the Horse receive any benefit by the admission of the outward Air, to compress the Bladders on the Lungs; 'tis not possible to force the Air out of the Bladder by that, nor will it yield to the pressure by the Finger.

The



The Wind in the Belly of broken-winded Horses is very considerable, especially in the *Colon*, which in this Disease makes that appear more large than usually it does in sound Horses ; and this is occasioned by the Flatulency of Humours in the broken-winded.

I have met with another Disease in Horses, which is an *Empyema* ; but 'tis usually mistaken for the broken Wind by the Vulgar, these *Empyema's* succeed Inflammations of the Lungs. I opened some Horses that had this Disease, and found their Lungs were swelled into Knots and Bladders of purulent Matter, and some of that matter flow'd about the Cavity of the Thorax, and I drew much of it out by striking the Farrier's Fleme into the Thorax, betwixt the Rib. The only way to discover the Difference of these Cases is the original Cause which in this is a Fever, Cough, and Inflammation and Expectoration of purulent Matter ; the Mouth is hot and the Body burns, and is consumptive, and by striking in the Fleme betwixt the 5th and 6th Ribs, some purulent Matter will come forth and may cure some.

I will next give a further Proof of the Rupture of the Lungs by the Dissection of a crooked Hawk, for the the Croke is evidently an Asthmatic Disposition produced by hard flying, which strains the Bladder, which contain the Air in the Abdomen,

or

or else those Bladders which contain the Air naturally in the Thorax of Birds; I stript off the Skin and Feathers; and afterwards blew up the Lungs by a Pipe put into the *Trachæa*, the Air which usually passes thro' the Lungs into the Bladders placed into the Thorax and Abdomen soon distended the Belly, and shewed a Rupture on both Sides of the Belly, but most on side, as big as a Bean, the Lungs themselves, the Heart and Brain were very sound; so that I could not impute the Croke to any other apparent Cause, than the dilatation of the *Pneumonic* Bladder in the Belly. And this corresponds well with the Cause of the broken-winded Horses, in which the Air-Bladders are Dilatations of the Membranes of the Lungs.

I opened a second Hawk which had the Croke, and after I had stript off the Skin, and blown up the Thorax and Abdomen, there evidently appeared under the Wing, and on the Back, divers Bladders full of Air; we pressed the Bladders, and the Air went into the Thorax, and we inflated that again divers times; and then the Air appeared on the sides and back of the Thorax, and blew up divers Bladders there; by which it was evident to me that this Hawk's Rupture was about the Thorax, and not about the Abdomen, as it appeared in the first Hawk. I have observed that the Noise called the Croke was made by Expiration

D d

and

and not by Inspiration. When I had sufficiently satisfied my self and those who were present about the Rupture, I considered the Description of this Disease in Mr. *Turburville's Falconry*, and the several Species of it agreed with the several Sorts of Ruptures I had observed; first the *Pantas* (or Asthma) of the Gorge, and this was the Rupture about the Abdomen; and this being incurable, the Falconers prescribe only this Regimen to give the Hawk only half a Gorge at once, to keep her in a Room with Lettice Windows, for Air, and to set her many Perches to fly from one to the other for Exercise, and to let her have always Water by her for bathing and cooling of her, and they wash their Meat; also Mr. *Turburvil* the Falconer oft bathes the Hawks, and says, that Bathing gives the Hawks Courage, much Boldness, and eager Appetite; the wild Hawk frequently bathe themselves, and so do other Birds.

The second Species of *Pantas*, called so from the Hawk's Panting) cometh from a Cold taken by wet Weather, or the Hawk's flying and being set up too soon after it in a cold place; and for this the Hawk's Meat is usually drawn thro Oil of Almonds, or Oil boiled in Water, with Chamomile, Liquorish and Sugar Candy; and in this all her Meat must be dip't. This keeps her Body constantly open.

The



The third Species of the *Pantas* is in the Reins and Kidneys, this differeth from the other: For it will leave her 7 or 8 Days, and then vex her again more strongly, and sometimes it will take her from Month to Month, (this is the Form or Type of the Periodic Asthma) in one he observes, That they stir the Pinions most, and in another the Reins more, and this must come from some Rupture in those Parts; he mentions a knob as big as a Bean on the Reins or small of the Back, which must be either a Rupture or Dislocation of the Spine.

Mr. *Turbervil* observes, That this Disease is rarely cured, and that there is a great Heat in such Hawks, and a Distillation from the Head, which makes the Disease worse; he avoids giving hot Meat, but that which is washed and tied up in a Chicken's Gut, or Butter and Lard washed white in a Pill; the casting are used of Cotton, Cubebs, and Cloves; the Meat is Calve's Liver steeped or dipped in Water, and other liquid and slippery Meats for the Catarrh again; and a Cautey on the Head, and Betony and Honey, bole Armoniac and Hony are proper for a fresh Rupture; Oil of Almonds and Sugar Candy, and Pectorals for the Defluxion.

Whilst I was viewing the last Hawk, I found the Filanders, which are a Parcel of Worms, like a Thread, creeping betwixt the Skin of the *Oesophagus*; and they were



a quarter of a Yard long, and the Head sharp, they were not far from the Liver; but I could find none of them within the Guts or Stomach, but on the out-side; and there appearing no Corruption in any Part, I could not but conclude that these were bred in the Guts, and that they had bored their way thro' them, and got betwixt the Skin up toward the Thorax; the Colour of them was white, and they appeared in Sir *Charles Holt's* Microscope like a Goose Quill. I observed they moved whilst the Hawk's Body was warm. I took them by the Head, and pulled out their Bodies from betwixt the Skins, where they lay in Rinds; and when I held them up, they appeared like Threads, and twisted round. The Signs of these Worms in a Hawk, are, she croketh in the Night, her Breath stinks, she beats her Pannel with her Beak, and writheth her Train. They are described lying in a Skin near the Reins, and chiefly trouble poor Hawks. What their Nourishment is, is not known, they have none from the Guts or Gorge; but because they cause the Hawk for to start and croke, 'tis probable that they bite the Membranes, they have been observed to have come out of the Hawk's Beak; and there are other Filanders described in the Hawk's Guts or Pannel; from whence 'tis very probable that those in the Reins, which I have described, had their

their Original. These the Falconers cure with Pills of Aloes, and Steel, and Honey and the other Filanders, with Garlick and an outward Ointment of bitter Almonds, Oil with Wormwood and Aloes: The late Falconers use *Merc. dulcis*, anoint the Back near the Reins, and lay on a warm Plaister. *Note*, the Hawk beats that place with her Beak. Wash the Hawk's Meat in distilled Water of Savin, or Rue or Wormwood, and apply those Plants to the Back.

I must add one other Experiment I made with this Hawk, she weighed 23 Ounces, the Blood which came from her was 3iss. I cut off her Head to bleed, and I found little Blood in her; 'tis wonderful that so much Spirit and Life could be drawn from such a small Quantity of Blood; 'tis observable that the crooked Hawks, and broken-winded Horses are of the best Mettle as any of their kind, and their violent Motion is the most frequent Cause of the Rupture.

I will give an Instance from Dr. Ridley's Observation, that will prove that the same Air-bladders will happen in the Lungs of Mankind who are Astmatic, pag. 219. he blew strongly into the *Trachea* of an *Embryo*, and thereby separated the exterior Membrane from the Substance of the Lungs into Bladders full of Air, and that by pressing of them by the Finger was difficultly reduced, or not at all; and the same Dr. Ridley

in the same Book in his 9th Dissection, in his Dissection of a Person who died of a Quotidian, he discovers Bladders full of Air on the Lungs, of half an Inch in Breadth, and that this Person was short-breath'd in Sleeping; but this he imputes to a *Polypus*, because he does not admit these Air-bladders to be the occasion of the Asthma.

*Note*, That Children by their long Cough, get Ruptures in their Belly, Gibbosity in the Thorax, and the Asthma (which is also a Rupture) according as the Cough strains those different Parts.

I opened an Asthmatic who died of an intermitting Fever, which ended in a Consumption, and I observed a mixt Disease of Inflammation, Imposthumation by the purulent Tubercula, and the Bladders were filled with purulent Matter or Phlegmatic. By this Observation I learnt that in Consumptions these Air-bladders are filled with Pus, and if the Asthmatic die hydropical, they are filled with Serum; which may observe the discovery of these Air-bladders, appear in broken-winded Horses before they are decay'd by a Consumption or Dropsy of the Breast or *Empyema*.

I might give this farther Evidence for this Opinion, that *Hippocrates* long since imputed the Asthma to some Rupture of the Lungs. I shall hereafter give these Instances of this his Opinion in the case of *Agasius's* Daughter.



Daughter, who became Astmatick by lifting of a Weight and *Hippocrates* calls; the Son of *Antiplaves*, *πρυματωδης*, who was an Asthmatick; but more of this I will give you, when I shall give the Cases about the Asthma from *Hippocrates's* own Writings.

I must confess that I do not so far understand all the Mechanism of the Lungs, as to demonstrate how the Asthma-fit is produced; neither can I convince the Reader that it is as I affirm, for every Physician will philosophize differently in explaining the manner how the Fit is produced, and the Mechanism is too curious in this as well as other Parts, that it cannot all be made sensible, so that no Person can convince another; therefore we can only make a probable Conjecture, which will only entertain the Reader with a Romantic Story; but it will be of no use in Practice: However this my imaginary Mecanism concerning the Fit, the Air first breaks off the *Bronchia* from the external Skin of the Lungs, which usually happens in Children, whose Lungs are weak and easily burst, by Coughing, or Running, or Crying, and holding their Breath, and convulsive Straining of their Lungs, the *Bronchia* broke off from the exterior Membrane contracts it self upwards, and leaves a quantity of Air betwixt the Skin and the *Bronchia*, which makes the Air-bladders



in all broken Winds. This Air compresses the neighbouring Bladders and Blood-Vessels ; so that if there be many Ruptures, as there is an exceeding great Number in broken winded Horses, this must make a continual Straitness both in Expiration and Inspiration, especially when the Stomach is filled, and swells after Eating or Drinking; and as we observe in other Ruptures of the Membranes, and in Strains, that they by any such Injuries become subject to De-fluxions upon Changes of Weather, or Diet, or Exercise ; and we may suppose the Membranes of the Lungs more subject to them than any other Part, because the whole Blood and Chyle passes thro' the Lungs in a loose Mixture, and the Air also alters its Motion by its different Weight, as well as its Heat and Cold: Moreover, all Causes which quicken the Circulation occasions thereby the Blood-Vessels of the Lungs to press that *Bronchia*, which is broken, and that Pressure or Fulness excites a Convulsive Contraction in the part oppressed, both as to its length and breadth, because the *Bronchia* are drawn up in Expiration, and then the wheezing is most heard; and this Contraction of the *Bronchia*, occasioned by the Effervescence of Humours, make both Inspiration and Expiration difficult and slow in all the Fits of the Asthma, all Smells, Dust and hot Air, being drawn  
into

into the Lungs, excite also the same convulsive Contraction and Straitness; and thus the Asthma is only a convulsive Motion by Irritation at first, but in time it acquires the Nature of a Convulsion, which depends on a windy Serum forced into the Glands of the *Trachea*, or thro' the Brain-glands by any Effervescence, all other Symptoms of the Asthma depend on this Rupture; which upon every Fit, occasions a convulsive Contraction, and that hinders a free Inspiration, and for want of this the Diaphragm is hindered in its Motion downwards, and for want of that Depression the Chyle, Lympha and Blood stagnated in the Abdomen; the Stagnation of the Chyle produces the Windiness, the Stagnation or slow Motion of the Lympha gives the Asthmatic *Diabetes*, the Stagnation of the Blood, the Coldness of the Extremities, Faintness, and weak Motion; the Spirits being windy produce convulsive Motions, and Effervescence and Defluxions of Serum; the immediate Subject of the Asthmatic Inflation is the inward Membrane of the *Trachea*, which consists of strait and oblique Fibres, and the same Skin composes the Bladders; the Fibres inflated, contract the Tube of the *Bronchia* in all its Dimensions, and thereby produce the Asthmatic Straitness and wheezing Noise. Dr. *Willis* mentions the Muscular Fibres of the *Bronchia* whereby they open and contract  
in

in Respiration, and he discovers the Motion of the cartilaginous Membranes of the *Bronchia* thus; *Cum pulmones dilatantur in longitudinem maximam protendantur cumq; illi contrabuntur partibus aliis inter alias deductis summe abbreviantur.* Note, That after the *Bronchia* are broken off from the outward Skin they remain contracted, and are apt to contract more upon accident, so as not to admit the inspired Air, nor to give vent to the Air inclosed in the Bladders. I cannot but believe that the Asthma was thought anciently to be a Rupture, because I find the Medicines used for inward Ruptures were the same as the Ancients used for the Asthma; such are the discussing and moderately drying, and in *Ætius* I find these Words, *Verum ad Ruptiones & vulsiones in profundo factas in pectore videlicet aut intestinis;* and he quotes *Rufus* for prescribing the use of warm Water in the Rupture about the *Pleura*. He commends *Aristolochia rotunda*, Roots of great Century, and many other Asthmatic Medicines given in Oximels. They called Ruption a Breach in the Muscular Fibres, with Effusion of Blood into a Sinus, but Vulsion or *σπασμαχα*, a distraction of the Membranous Fibres with pain, and they wanted Anodines, Discussers and Dryers; the Asthma is really a Rupture not of the Muscles but Membranous Parts, and there is some Effusion



fusion of Blood, as appear'd by the History of *Agasius's* Daughter in *Hippocrates*, and the black Spittle observed in Asthmatic Fits are from the Blood-Vessels. I desire you will compare the Asthmatic and Rupture-Medicines collected by *Guesner*, viz. the *Euporista*; and you will be satisfied that the great quantity of Asthmatick Medicines were prescrib'd on the account of being proper for Ruptures; and that I may fully satisfy you, I have made the following Collection, by which I hope to prove my Assertion.

---

*A Catalogue of the Specificks for Ruptures compared with those for the Asthma, and distinguished by their Tastes.*

1. **F**OR Ruptures, The Asthmatics of the Worm-the same Taste, abro-wood bitter, the tanum 3j. with warm Decoction of *Abro*-Water.  
*tanum.*
2. The Bitter-sweet Agarick 2 *oboli*, with nauseous, agaric *Passum*.  
with Mulsam.
3. Bitter-smoky-roots 3ij. of great Cen-  
of *Acanthium*, great tary-roots with Wine.  
Centaury-roots.

3. The



4. The Bitter-sweet An *Eclegma* of *lychinis* Taste Gen- Briony-roots, or 3j. tian-roots 3ij. with of the Juice, and Water, Juice of Bri- Honey 3j. of *Aristo-* ny-roots 3j. with *loch*ia-roots with Ho- Honey, Juice of *A-* ney or Water. *ristolochia*-roots.
5. Bitter-Styptics of *Marrhubrium* boiled, the dead Nettle, *Botrys* in *Melicratum*. Classe Decoct. of *Chamedrys*, or *Scor-* *dium*, Betony.
6. *Acerbes*, Juice of Juice of *Equisetum* House-leeke, and or Plantane boiled in Juice of *Polygnat*. Meat, Palmes 3j.
7. Acids and Aroma- Nettle seeds and tics, *Costus* 3j. with Honey, Rue and Dill. Wine, Roots of A- Decoct. of Thyme, *corus*, Seeds of *Na-* Hyssop, Honey and *sturtium*, Seeds of Figs. Rue, Iris, Nardes, *Calamus Aromaticus*.
8. *Terebinthinates* A- Decoction of the crids, Decoct. of *Enula* or *Baccharis* in *Enula*, compound Water, *Pix liquida*, Decoct. of *Raccha-* and Honey; Rosin, *ris*, Juniper-berries, Fennel-seeds and Ho- and Honey. ney.
9. Acrid Gum Saga- Myrrh the Bigness *peme*, *Opponax*, *Gal-* of a Bean, *Ammonia-* cum

- banum, Myrrh, Syl-* cum and 3j. with Oxy-  
*phium.* mels, Bitumen with  
 Wine and Castor.
10. The corrosive A- *Aron* and *Dragon-*  
 crids, *Moly* and *Pep-* roots in Diet or Broth;  
 per-ground. 3j. of squills roasted,  
 or Oximels.
11. Fætid; *Rue, Ca-* Seeds of *Sphondyli-*  
*stor.* *um* and Honey, the  
 Lungs of a Fox 3iij.  
 with *Mulsum*, Castor,  
 and Honey, *Sulphur*  
*vivum* in an Egg, Sul-  
 phur and Arsenic-  
 Fumes, Urine.
12. Acrid Nasturtium Rocket-seeds and Ho-  
 feeds. ney, Juice of Reddish,  
 dry *Sinus*, Wood-lice  
 powdered, and Hony.
13. Balsam, *Semen Bal-* Bals. *Peru*, *Oleum*,  
*samum.* *Cadrina.*
14. The Mucilaginous Seeds of *Periclayme-*  
 Decoct. of Mallows *num* 3j. 40 Days, Asses  
 in Water. Milk.
15. Styptics all vul- Pills of *Cypress*, Juice  
 neraries. of Quinces; quench  
 Steel in Vinegar, and  
 drink it diluted with  
 Water, Decoct. of  
*Adiantum.*

Bleeding

Bleeding is proper for both Ruptures and Asthma's, and Vomits for old Diseases, but we must avoid Styptics and Fumes, as injurious to both, when by this Catalogue of the *Modus* for Ruptures and Strains, compared with the Astmatics; you may find there is so great a Similitude in Taste, that they were certainly indicated by some common Cause and Notion; and since they agree in Taste, they agree in Effect, for curing all the Species of Ruptures, and I reckon Asthmas to be one of them.

Before I treat of the Cure of the Asthma, I will fully describe the Respiration of the Astmatics, which no Author has yet done. And I will then mention those Indications which may be taken from the Pulse.

In the Asthma-Fit I observed that the Pulses were 97, and the Respirations but 7 in one minute; the frequency of the Pulse depends on the Effervescence of the Humours, the slowness of the Respiration on the Constriction of the *Bronchia*.

The Pulse at Night before the Asthma, was 88 in a minute, and the Respirations 25, and both were Signs of great Rarifications of Humours.

The Constriction the on Lungs makes the Respiration rare, and disproportionable to the Pulse.

There is this Inequality also betwixt the Inspiration and Expiration in the Asthma,  
the

the Inspiration is made in the time of three Pulses, and the Expiration in 10 Pulses; and by this we may discern that both Motions are impeded: We strain hard for Inspiration, and we are very long in Expiration, which is attended by much Wheefing, the Inspiration is quick in respect to the Expiration, which is flow; and there is 13 Pulses to one Respiration at least, and the quiet or interval takes one Pulse betwixt each Respiration.

The Day after the Asthma the Respirations were 8 in a minute, and the Pulses 88, the Pulse sunk in Number, and the Respiration rose as the Fit went off; and when the Constriction on the Lungs is quite off, which is about the third day, the Respirations rises to above 20 in a minute, the Pulses yet stand above 80, till the Effervescence sinks.

The Pulse comes to its natural Number in 4 or 5 days, but the Respiration returns not to its natural Numbers, till all the Phlegm is spit up.

The natural Number of the Pulse is 70, and 14 Respirations in one minute.

In an hystERIC Asthma, without any thick Spit, the Pulse is very small, quick, and frequent, and the Respiration is more frequent, than in the Pneumonic Asthma; therefore the Constriction on the *Bronchia* is less than in the other which has much Phlegm; there is notwithstanding much Wheefing



Wheefing from the Constriction of the *Bronchia*, and not from Phlegm, the time of one Respiration was 4 Pulses, which is too little; for the natural Proportion is 5 Pulses to one Respiration. I find Water and Spirit of *Sal Armoniac* is very proper, and *Laudanum* at Night, cures the Fit after Bleeding; and I find the Cortex puts off their Fit, and I add *Sal Martis* often with it, hysteric Fits generally preceed hysteric Asthma's, and the straining in those Fits and holding the Breath breaks the *Bronchia*, as in the Pneumonic Asthma; for no Constriction could make them wheefe alike without the Rupture. The Effervescence is alike in both Species of the Asthma, and the external Causes of the Fit the same, but the hysteric Cough more by a thin sharp Rheume; and 'tis evident that strong Malt Liquors, or strong Wines, act like Poisons in all Asthmatics.

In an hysteric Woman, subject to hysteric Fits, about 40 Years old, when she became purfive and wheefing by foggy Weather, I counted the Pulse which was but 74 in a minute, but her Respiration was 27 in the same time, in this case the Lungs were irritated by the Fog, but the Pulse not disturbed.

In a *Pneumonic Asthmatic* when only Purfive in a Morning, the Pulse increased to 83, and the Respiration decreased to 11 Breaths in a Minute. At another time I observed in the same *Pneumonic Asthmatic*, that  
in

in a Purfiveness his Respirations were first 14, and as that went off 25, and the Pulse 85.

*The Pulse in the Orthopnæa is thus described by Galen.*

The Pulse is inordinate and unequal in the Fit, and deficient; but if it be dangerous 'tis very frequent, if extreme violent 'tis slow and deficient, if Mortal frequent and languid: To this I must add, that the Pulse in *Asthmatics* is ordinarily small, quick, frequent, intermitting.

The Circulation in *Asthmatic-Fits*, as appears by the Pulse, is inordinate, unequal, deficient, small, quick; frequent; the Causes of which are also evident by the Pulse.

The small, weak, inordinate, depressed Pulse demonstrates the Stop in the Circulation thro' the Lungs, which occasion the *Dyspnæ*, Flux of Urine, Coldness in the Extremity, fainty Sweats, rare Breath, Paleness or Blackness in the Face, Palpitation of the Heart, &c. and these Pulses indicate the Removal of the Cause which oppresses the Lungs, and contracts the *Bronchia*; and this is either a Convulsion in the *Hysteric Asthma*, or a Defluxion on the Glands of the *Bronchia* in the *Pneumonic Asthma*, which irritates a convulsive Contraction in those *Bron-*

E c

chia

*chia*, which are broken off from the external Skin of the Lungs: In the former a Defluxion of windy *Serum* passes into the Nerves of the Ruptured *Bronchia*. In the *Pneumonic*, the Defluxion passes thro' the Bronchial Glands, and the Constriction of *Bronchia* stops and oppresses the Circulation thro' the *Pneumonic* Vessels.

The quick and frequent Pulse shews the Effervescence of Humours in the *Asthma-Fit*, which occasions the Defluxions; these Pulses indicate the Cure of the Effervescence or *Ephemera* by a cool Regimen, and proper Evacuations.

Thus by the Pulse we may know the particular Circulation preternaturally alter'd in the *Asthma*, (as well as other Diseases) on which all the Symptoms depend; and by the Pulse we also know the Causes of the preternatural Circulation, which is the Effervescence and Defluxion; and the Pulse will also manifest what Regimen of the External Causes produce the Disease. In the frequent and quick Pulse the hot Regimens is injurious, and the cold Regimen in slow Pulses and the rare.

Fat *Asthmatics* after some Years fall into a Cachectic State, and then those Medicins which help the Circulation, are indicated by a slow and rare Pulse, into which the quick and frequent Changes, as a Serous and Pituitous *Cacochymia* abound, and are always



ways bred by a Circulation often stopt in fat *Asthmatics*.

In the lean *Asthmatics*, the Pulse becomes more frequent and *Hectical* by the frequent Expence of the *Succous Nutritius*, by Spit and Urine, and the Blood becomes Sizy and Salt. These must be cured as *Hectics*, and the former *Cachectics* as *Hydropic*: By these Observations we may learn, that the common Methods of Cure in every Disease must be changed, as the Pulse alters into more frequent or rare.

The next Particular I shall propose the Method of Cure, which is indicated by the Rupture in the *Asthma*; and I will mention those Specifics which respect the Nature of the Disease, as it is a Strain or Breach of the *Bronchia*, and distinguish them from the other Specifics, which only respect the Symptoms of the Disease.

If the *Asthma* be by a Strain or Breach, then Bleeding, Purging, and Vulneraries, and Opiates, ought at first to be used to cure it. But after the Disease is fixt, and grown habitual, 'tis only to be palliated by such Medicines which hinder Defluxions on the diseased Part, such are Bleeding, Vomiting, Purging, Opiates, drinking Water, and unfermented Liquors, and cold Baths. And I reckon that the Defluxions may be either thro' the Glands on the *Trachea*, or thro' the Nerves; the first happens in the *Pneumonic*



*Asthma*, and the last in the *Hysteric* and *Convulsive*.

The chief Indications in the *Asthma* when habitual are,

1. To prevent any Effervescence in the Humours by a cool Regimen and spare Diet, and keeping the Body open.
2. To divert the windy Serum from the Defluxions mention'd by such Evacuations as are usual against *Catarrhs*, as Bleeding, Vomiting, Purging, Wood-drinks, &c.
3. To cure the Serosity, Phlegm, and Inflation, which are the accidental Symptoms produced by the Fits.

The Stagnation of the Blood and Chyle in the Lungs produces the Phlegm, which is usually spit up after the Fit; but it was not there 'till the Straitness stopt the Motion, or retarded the Circulation, upon which the Chyle separates from the Blood, and by Stagnation produces the Viscid Phlegm; and this cannot be evacuated 'till the Straitness goes off, and then that Viscid Phlegm may be easily expectorated by *Oxymel Scylliticum*, Oyl of Linseed, and Syrrup of Balsam mix'd with Sugar-candy; and riding, sneezing, vomiting, the hot Gums; and *Oxymel* made of Orris-roots and *Enulaacum*, *ana* ʒj. in a quart of Water boyled with Honey tʒss. Vinegar ʒiv. or else use Myrrh, Honey

ney and Nutmeg, or *Ammoniacum* dissolved in *Oxymel*, Cock-broth and Pectorals.

For the *Inflations* in the Belly use Vomits with *Oxymel Scylliticum*, or the *Vinum* and Oyl, *anna* ℥j. or ℥ij. or *Ipecacuana* ʒss. and keep the Body open, either with *Oxymel Scylliticum* thus; boyl ℥ij. in ℔ij. of *Oxymel*, and give it at Night only; or thus, boyl Liquorish ʒj. in Water ℔i. to ℔ss. add Honey ʒiiij. Vinegar ʒij. boyl to an *Oxymel*, and add Aloes ʒss. give a spoonful or more at Night, during the Winter upon any Inflation of the Stomach.

Nothing cures the *Serosity* in *Asthmatics* like a Vomit of Wine of Squills, which I have seen has occasion'd the making of some Gallons of Water; this must be repeated once in fourteen Days, and a Purge given once in a Week of *Resin* of *Jalap*, and *Mercurius Dulcis* in a Dropsy. I gave to a Patient who had a Dropsy in the Breast a Vomit of *Emetic Tartar*, by which he vomited very well, but made little Water with it; but a Vomit of Squills being repeated he made an exceeding Quantity of Water, so that the swelling of his Legs fell, and his Breath was made easie. Bitter Digestives are also necessary, and Diuretics of *Cream* of *Tartar*, *Sal Prunel*, *Sal Tartari*, and the Diuretic Juices of Plantane Water-cresses, and Liverwort, expressed with *Aqua Raphani Comp.*

The *Asthmatic* Phlegm chiefly affects the *Trachæa* and *Bronchia*, and distils from the small Glands which naturally give a slime to the inward Membrane, but it seldom affects the Bladders; for this reason, and because 'tis crude and viscid, the Lungs suffer little by it, and after 40 Years continuance it does not breed a Consumption.

4. We must choose a dry Air, and avoid the smells of Sulphur, Pitch and Tallow, and all Dust, for these things excite the Fits; and since these smells are injurious to the Spirits of *Asthmatics*, no Sulphur nor Fumes, nor Terebinthinate Medicine, can be proper for the *Asthma*; we must decline all Employments near the Fire, as Works in Glass, or Metals, and the Fumes of Quick-silver, or the grinding of Stones, or any dusty or laborious Business: All Oily Smells offend the *Asthmatic*, as fry'd Fish, melted Greese, the snuff of a Candle, and Soap, which inflate the Animal Spirits in the Membranes of the *Trachæa*; avoid moist and damp Houses.

5. We must use moderate Exercise before Dinner for one Hour, and in the Morning use moderate Friction, for revulsion, both in the Arms, and Legs. and Thighs, and Belly; for in those parts, the Fits of the *Asthma* cause the Blood, Lympha, and Spirits, to stagnate, and by agitating them, or attracting them, outwardly by Friction, they affect the Lungs less; the Fits stop the Circu-



Circulation every where, but Exercise and Friction excite it, and repair the Injuries done by stagnation of Humors. Once in a Week use a general Friction, and the revulsive every Day: All violent Exercise is injurious by exciting an Effervescence.

6. The Diet against the serous and viscid Cacochymia is necessary, to drink little, especially in old Asthmatics, who are Hydro-pic, they cannot bear Mineral Waters, or Whey, bitter Drinks, and Tincture of Steel do good to such; eat Flesh-Meats at dinner, of one or two sorts, without Sauces, Pickles, Gravies, or Roots, as Turneps, Cabbage, Egg-water, Sugar, and Nutmeg, are good Breakfasts, and Elder-Thea at Night, or Colts-foot-Thea.

We must avoid all windy Diet, as Beans, Pea's, and the Olera, and Fruits, and fermented Liquors, as Wine and Malt drinks, and Bread of any sort.

All hot Diet of Oysters, high Sauces, Anchovies, Gravies, Cheese and Bread, high fermented, swell and inflate the Stomach, and occasion the Effervescencies, Defluxions, and Fits.

But I have us'd Toast and Water, made by boiling the Water and pouring it upon a piece of Bread toasted, in the Winter, and untoasted in the Summer, and so let it stand to cool.



I have pounded Apples and put Water on them, which I found to agree with my Stomach, as ordinary drink ; and I have oft used Cyder and Water with my Meat, which is exactly agreeable to my Stomach.

I frequently in the Winter use this, Honey-Caudle : Boil a spoonful of Honey in a pint of Water, scum it, and then dissolve the yolk of an Egg in a little Water, and mix 'em, adding Nutmeg.

I frequently drink Coffee and Thea after dinner two or three hours, when the Meat is a little digested, and then it helps the digestion, and distribution of the Chyle, and the same Liquors are properly used after Exercise to prevent catching Cold ; but the use of them in the Morning very much affects the Nerves, and disturbs the Animal Spirits by over-rarifying of them.

The most proper Breakfast all Summer, for the Asthmatic, is a glass of cold Water, with some acid Syrup, or with two or three spoonfuls of Verjuice, or *Creme of Tartar*.

The Asthma, Epilepsie, and Convulsions, were esteemed cold Diseases by the Antients, who endeavoured, by hot Medicines, to correct the cold Humours which produc'd these Diseases : This mistake introduced all the hot attenuating Medicines in the Asthma ; but we find by Experience, that all hot, acrid, aromatic, vinose Diet, especially

cially all fermented Liquors, and Brandy Spirits, bottled Liquors, Surfeits, and full Meals, strong Wine, occasion the Asthma Fits; from whence I infer that the Asthma is a hot Disease, and that the Humour and Spirits are too much rarified in it.

*Arculanus* gives us this caution, not to use hot Medicines in the Asthma, but moderately warm, with Lenients to help expectoration, or else the moist'ners mixt with abstersives.

Hunger and Thirst are the best cure for the Asthma, especially little, and very small drink.

The viscidty of the Phlegm will admit of no mucilaginous Diet, as Fish, Cheese, Milk, and Meal Meats, and Leguments, but requires much diluting.

The Styptic Liquors, as Claret, are very injurious to Asthmatics, whose Bodies ought to be kept fluid by Cyder-drinking, Honey-drink, Rye or Oat-bread, and eat no Bread in a Morning, which is an ill custom, because it binds much; avoid all Evening-drinking and Suppers; Liquorish-water and Wood-drinks with it, and Dates and Figs are proper at Night.

*Arculanus* forbids Vomits and Purges in the Fits, and this is a judicious caution; he observes that Glysters are difficultly given, and that the Meat must be thin, and little in the Fit, Ptysans, or a Mulsum, boil  $\text{zij}$ .  
of

of Nasturtium-seeds, in ℥ij. of them add *Sal Niter*, or *Sal Armoniac* ℥iij. I only use Egg, and Water, and Sugar, and Nutmeg, in a Fit, and no Bread.

*Avicenna* imputes the *Asthma* to windiness, and prescribes Carminatives and Evacuators and Openers.

*Mesne* advises to avoid all the hot *Incidentia*, and not to drink after Meals, to keep the Body open, to cleanse the Lungs by sorbiticus of Bran, Sugar, or Honey, and by Oil of sweet Almonds.

*Horatius Augenus* prescribes a decoction of Guaiacum ℥vj. Liqueurish ℥ij. in ℥xij. of Water for ordinary drink for 40 days: He commends Errhines, and not Issues; to cleanse the Lungs, he uses *Lohoc sanum de pulmone vulpis*, with *aqua mulsa*; he commends Syrup of Tobacco ℥vj. Oil of Sulphur ℥j. make the Syrup by decoction of Tobacco and Sugar.

7. We must evacuate the windy Serum once in a Month by Vomits, if the Fits be grievous, and purge with Salt, or Oxy-mel Aloeticum once in 14 days, or upon the changes of the Moon, or any inflation of the Stomach.

8. We must check the hot flatulency of Humours by drinking of Bath or Steel-waters once in a Year; purge once in a week with them, and continue them two months, ℥ij. in a Morning: Abstain from fermented



Liquors, use Wine and Water, or Apple-drinks, or a roasted Apple in Water and Sugar. In hot Weather use Acids and Water in the Morning; make the syrup of Verjuice by boiling ℥j. with ℥ss. of Sugar, or *Gas Sulphuris*; or take *Creme of Tartar* ʒij. in Water, or Water-gruel; or make Lozenges of *Creme of Tartar* and *Sal Prunel*. drink a Glass of cold Water after all Meals.

The windy Spirit lodged in the Stomach or *Colon* is evacuated by a laxative Diet, Honey-drinks, Crato's, Oxymel at Night, or this.

Take dry'd Squills ʒij. Liquorish and Caroways, each ʒj. infuse them in Vinegar by the Fire hot two or three days, then add Sugar ℥ss. Take of this at Bed-time ʒj. or ʒij. upon any inflation in the Belly when the Fit is expected; and this is good also in the Fit, Oil, Butter, and course Bread, and Honey-drinks keep the Body open; this windy Spirit is bred in the chylaceous mass, which stagnates in the Stomach and Guts, for want of the depression of the *Diaphragm* in the *Asthma*. This Oxysaccharum and all the Scyllitic Medicines stimulate the Peristaltic Motion, and the want of that motion is the immediate cause of the stagnation of the fermenting mass in the Belly, and that produces all the windinesses in chronical Cases, as the *Hypochondriac*, and *Hysteric*, who are frequently too much bound, as the *Asth-*  
*matics*



*matics* also are; to cure the windiness in these Diseases is to irritate the Peristaltic Motion, and keep the Body open.

In the Summer use Cold Bathing twice in a Week, and in the Winter once; this cools the great heat and rarification of the Spirits, which produce Effervescences, Defluxions, and Windiness; this cools the Head, strengthens the Limbs, excites the Appetite, and makes the *Asthmatic* insensible of the changes of the Air; and for the same end the *Asthmatic* ought to use Unction once a week in the Winter, with Oil of Mustard-seed, or Walnuts, or bitter Almonds; but Linseed Oyl stinks, and makes the Person smell offensively to other Persons. All boiled Oils, as Lillies, Chamomail, smell offensively. Oil of Orris is good, and the insolate Oils of the fragrant Plants and Flowers, which are not suffered to putrify too long in them, as Orris-roots, Dill, Lilly of the Valleys, Violets, Junquils, Jesamy, Orange-flowers, Niter, and Oil of Orris to rub the Breast.

If the Bath-waters be used, we must bleed both before and after them, and Purge oft, for it heats much.

If we use the *Cortex*, I give it in cold Water 3ss. at a dose, and keep the Body moderately open.

I have mentioned all the Indications and Medicines necessary to prevent the Fits, and since 'tis impossible to cure the Rupture, the  
Disease

Disease can only be palliated by the cold Regimen, and the Symptoms remaining after the Fits may be helped. I will next mention the Cure of the Fits when they happen.

1. As soon as they fear they will come, take some Oxymel Scilliticum one or two drams, or the Oxymel Aloeticum, to carry the Contents of the Stomach downwards at Night ; in the Day drink fair Water and any acid Syrup ; eat nothing all Day, unless fainty, and then take Egg-Caudle, or the Hony-Caudle, or Coffee or Thea towards Night, or Wine and Water, but eat no solid Meat, unless a potched Egg be necessary. At Night take of this mixture, Oil of sweet Almonds, Oxymel, Scilliticum and Diacodium with Sugar-Candy ; give nothing hot in the Fit, avoid all hot Spirits, Tobacco, Wine, Motion, and all Suppers.

2. The next Day use Pectorals, Ptyfans, and oily mixtures, and continue a thin Diet till the Fit goes off ; if it continue two or three Days, and till the Expectoration happens.

Fanning agrees with the Asthmatic in their Fits, and holding up the Arms by Servants, and sit still in an armed Chair all Day, and lean forward, and let the Air of the Room be cool, and without the dust of the Bed, and Smoak, use no Friction nor Ointment,

ment, or Cupping, or Fumes in the Fits.

I will here give you an Extract from the best Farriers Writings concerning the palliative Cure of the broken-wind, and you will find their Motion and Practice corresponds with that I have mentioned.

The broken-winded Horses have a beating in the Flank, because their small Inspiration and quick Expiration, their Nostrils open, which shews their labour for Respiration; they stale much, which is by the stagnation of the Blood, and separation of the Serum from it; they have a dry Cough, occasioned by the contraction of the *Bronchia*, which are broken, or the stop of Circulation by the Air-Bladders. The Farriers, like the Old *Galenists*, think this Disease depends on a cold Phlegm, and yet they say, the Symptoms are from Putrification, or a hot Cause; the occasions of this Disease, they say, is running or drawing (which must burst the Lungs) and that a long Cough oft ends in the same, (whereby the *Bronchia* are violently forced upward, and jerked off from the outward skin of the Lungs). The Farriers believe this Disease is curable in the beginning (while 'tis only a *Catarrh*) but not when the dry Cough is settled, which is a true sign of the windy Ruptures in the Lungs. They observe that Purgatives do little good, but they use cutting and attenuating



nuating Medicines, and those very temperate, because the Lungs are heated; such as Vinegar and Niter, and the fumes of Sulphur. They say Hay and Clover are too hot Food for such Horses, and for that reason, they wet it. They observe that the Horse breaths best at Grass, but worst upon hot and dry Food, and such are Hay and Oats; the cold Air and cool Food agrees best, and for that reason they keep them abroad at Grass; they have not yet try'd the setting the Horses deep in cold Water like a cold Bath. They never give any Bread to these Horses, the chief of their Medicines are hot Pectorals, Tarr, Sulphur, Carminative-feeds, Garlick.

In the beginning of the Disease the Farriers use Styptics and Vulneraries, then melt Lead, remove it from the Fire in all ℥ij. stir it and powder it, and mix Brimstone ℥j. with it, give ʒj. in moist'ned Bran, chopt Mullen, and mix with the Horses Oats, moist'ned with water, and for his ordinary drink mix ℥j. of Honey in a pale of Water, and give it for a month, or quench Brimstone ℥j. in a decoction of Mullen, Bramble, Hyssop, Broom, Liquorish, each Mij. add Honey ℥ij. give this for ten days, and the Horse must eat neither Hay or Oats, but moist'ned Bran, and chopt Straw, which are coolest and poorest Diet for Horses overheated. To cool the Horse, they give *Sal*  
*Pru-*



*Prunel*, or *Sal Polychrestum* ʒj. with Juniper Berries ʒss. in moisten'd Bran for fifteen days, they observe there is a necessity of keeping the Horse's Body open by Honey or Grass; and for the same end they give Antimonial Powders, but Glasse of Antimony were the Crocus will not Vomit a Horse, but they are Laxative; the Crocus they give to one ounce or two ounces, and the Glasse to half an ounce. Others give *Diapenta* and *Agaric*, or *Colloquintida* in Pectoral Drinks. *Marckham* advises to put twenty Eggs in Vinegar, and give two every day; and he mixes Salt-peter with the Oats. I have mention'd the Practice of *S. Sollizeul* and *Marckham* to shew that they use cool Diet and cool Medicines, such as Niter, Vinegar, Lead, and wet Hay and Oats, turning to Grass; and this Method prevents the Defluxions and Effervescency in the broken Winds.

I cannot but value these Farrier's Notion, and practice more than the *Paracelsians*, who derive the *Asthma* from the Tartar of the Lungs; and against this false Notion, they prescribe Sulphur, Balsams, Spirit of Tartar, Wine, Myrrh, Spirit of Flesh: The Farrier's often mention the bursting of the Lungs.

*Crollius* uses *lac Sulphuris* and *Laudanum*, others use spirit of Sulphur, Vitriol, spirit of Verdegrease, Sulphur and *Ammoniacum*:

But

But these sharp Acids are as mischievous as the Volatile Salts. *Ruland* uses Balsam of Sulphur, and Oyl of Sugar, with Spirit of Sulphur and Flowers of Sulphur sublimed from Salt.

*Note*, All these Chymists mistake the Disease, and consequently the true Practice; yet they imitate the *Galenists*, and where they used *Oxymels*, *Niter*, and *Sal Armoniac*, the other give acid Spirits and mixed Salt.

The Vomitters help Expectoration, as *Aqua Pani*, *Porcini*, *Aqua-vitæ*, *Alba*, or Syrup of the Roots steeped in Vinegar, and an *Oxymel de peto*. *Cardan* commends Butter and Oyl and Honey, Salt, Vinegar and Sugar in the *Asthma*, as Pectoral, and *Olibanum*, with Honey and Fox Lungs and Bole. He says, he cured an *Asthma* by Wood-drinks, a Blister and an Errhine, but this could only respect the Catarrh.

*Malpighius* in *Opera Posthuma*, gives a Dissection of an Asthmatic from the swelled Glands in the Abdomen, no fault in the Lungs; but this is only a Symptomatic *Asthma*, such as the Tumors of the *Viscera* make.

*Mesene* advises to vomit by a Decoction of *Convolvulus* in *Oxymels*, Cock-broth, with Seeds of *Carthamum*, and *Oxymel Scylliticum* in Water, Barley-water with bitter Almonds, decoct of Cicers in Hydromels; his Carminatives are Rue and Castor, Ammoniacum

niacum 3j. in Rue-water or Oxymels, Cumminseeds in Wine or Vinegar, or Nettleseeds boyl'd in Barly-water and Honey, Sefeli and Honey, Figs and Orris boyled:

The *Dropsey* of the Breast is oft mistaken for the *Asthma*, and for that reason I will give its usual Symptoms, whereby it may be better distinguish'd.

The Breath grows short insensibly; they have much Thirst; they do not always wheeze, but are made more short-breath'd by Motion, and lying down in Bed; the Cough is small, the Pulse is rare and intermitting, unless they move, which makes it quick; they have no viscid Phlegm but watery Spittle, their Legs swell at last, and they cannot lie down at last: The Urine is small in quantity, but at first beginning of this *Disease* I have seen it like a *Diabetes* in great quantities, which stops, and then it flows into some Cavity of the Breast, by a Breach of the Lymphatics of the Lungs, the Heart palpitates, and there is a sort of Hectic-Fever, for want of the Serum in the Blood they are apt to sound, and in the beginning complain of Giddiness, which makes them fall down; it usually seizes old Men who sip much, and comes after long Coughs, the Water does not always fluctuate, and if it be purged off, it returns. Purging disturbs the Breath more than Vomiting, give an Opiate after it,

In



In *Asthma's* from Metals the Chymist uses Oyl of Tartar 3ij. Oyl of Vitriol 3j. *Laudamum* 3ij. but Oyl of Almonds and Milk seem better, especially Asse's Milk.

4. I will give you next *Hippocrates's* Opinion about the *Asthma*; and I will prove, that he knew it to be a Rupture, and that since his Time no Medicines have been observed so Useful as that he mentions; so that we owe the truest Notion and the best Medicine to *Hippocrates's* Experience and Judgment.

In the end of the Third Book concerning the difficulty of Breathing, *Galen* promises a Fourth Book on that Subject, in which he design'd to comment on what *Hippocrates* had deliver'd in his other Book concerning the difficulty of Breathing; but since he did not go on with that Performance, I have collected what I thought Useful concerning the *Asthma* from *Hippocrates's* Writings, by which I will make it appear, that he had a different Notion of the *Asthma* than *Galen*, or any of his *Disciples* have had, who seem'd never to have comprehended *Hippocrates's* Sense, and the true Nature of the *Asthma* as he has describ'd it.

In the Third Book of *Diseases*, page 47. *Hippocrates* describes the Tumor, or swelling of the Lungs, which at first produces the *Asthma*, and he says, that Tumor depends



on Heat when the Lungs swell, being filled with Heat, a violent and hard Cough seizes, the Breath is drawn as in an *Orthopnea*, the Respiration is quick, and the Anhelation is frequent, and the Breast swells, the Nostrels are expanded, as in a Horse after a Course, and he frequently puts forth his Tongue, and the Breath makes a wheezing Noise, and appears heavy, and the Breast cannot open, but is much broken and grows weak; a sharp Pain is on the Back, Breast and Sides like the pricking of Needles, and it burns as by the Heat of the Fire, and redness comes out of the Breast and Back like an Inflammation, and a vehement Acrimony and Anxiety invades it, that the Person can neither stand, sit or lie down; but being Anxious tosses about as if he were dying, and they usually die on the Fourth, or Seventh, or else they scarce dye if they escape longer; for the Cure of these give a Glyster, then bleed from the Arm, Nose, Tongue, and any part of the Body; give cooling Portions, and *Sorbiticum* of the same Quality, and give Diuretics which do not heat; apply to the Pain when violent Emollients, and moist Fomentations to warm and moisten the pained Parts; but to other Parts apply cooling Medicines, and apply them for sometime, and remove them to produce Coldness wheresoever the Parts burn, and altogether to abstain from Wine. On this Case

Case I will make the following Observations.

1. That the *Asthma* oft begins with a Fever, and Inflammation, and violent Cough; this is fatal at first without due Evacuations, and this not being well cured, produces the Asthmatic Effervescency which happen after.

2. The Inflammation mentioned in this Case outwardly, is a Sign of the same inwardly, which produces the *Peripeumonia* in the Lungs; the outward is of the Nature of an *Erysipelus*, which we call Shingles, and before the Shingles much pain is felt in the Side, with itching and burning: This Inflammation fills and swells the Glands of the Lungs, and makes them lax and subject to future Fluxes of *Serum*.

3. The Cough is violently irritated by the Fulness and Tumor of the Lungs, which occasions a Weight and Straitness in them, and occasions the Contraction of the Reticular Muscles spread on the *Vesicula*, which are the immediate Instruments in coughing. The Continuance of this Cough jerks off the *Bronchia* from the exterior Membrane of the Lungs.

The Pains mention'd are from the Inflammation of the Breast.

4. Here is no mention of Phlegm to produce the *Asthma*, but the Feaver, Inflammations

mations and great Cough, which are to be cured by cool Things, and abstinence from Wine; and by this we are taught to use moist and warm Things to Pains, and to other Parts the *χυλῆρα*, which were Oyl and Salt-peter, or Emollient, Meals, or Bran, and Vinegar.

5. We must observe, that the *Asthma* is evidently discribed by the *ὀρθοπνοία*, and wheezing, and especially this Word *διαρρήγνυται*, by which the Rupture in the Lungs is intimated.

*Hippocrates* in his Description of Diet in acute Diseases, *Sect. 4. Pag. 67. 68.* gives us the Description of a hot Distillation producing the *Asthma*.

When in the *Summer* or *Autumn* a hot Rheum flows down from the Head, which Rheum he calls *νιπῶδες* it is made hot and sharp by these Seasons, so that it corrodes and ulcerates, fills them with Wind, and by that an *Orthopnea* is produced with much dryness, the Face seems small, but the Tendons on the out-side of the Neck are distended, and a *Tetanus* seems to draw them; the Voice is abrupt, the Breath small, and the Breath is drawn in violently and frequently: In these the Wind-pipes is exulcerated, the Lungs filled, and they cannot draw in the outward Air.

The



The Observations I shall make here are,

1. That the *Asthma* Fit is produced by an acrid hot Defluxion, and in the *Summer* such hot and sharp Rheums are bred by the great Heats, and the Phlegm either more thick and Dry.

2. That this Defluxion fills the Lungs inwardly by a windy Spirit, which hinders the drawing in of the Air, by which we must understand that the *Bronchial* Membrane is inflated by a windy Spirit, and the same produces a *Tetanus* in the Muscles of the Necks. In all *Orthopnaea*'s the Voice is hindered, and the *Bronchia* contracted and cannot admit Air enough; the great Straitness makes the drawing of it violent to admit the Air, the Fever makes the Breath frequent in this *Asthma*, with a hot Defluxion as well as in the former with an Inflammation. In old *Asthmatics* any Defluxion on the inward Membrane of the *Bronchia* irritates its Constriction of the *Bronchia* Parts, and so produces the Fits; but a very hot Defluxion irritates much more.

*Hippocrates*, Pag 55. Sect. 4 mentions an *Asthma* occasion'd by the ill-dieting in a Pleurisy, and that if the Pleuritic be fed too soon an *Asthma*-fit will happen by the thick Phlegm, which being viscid strikes to the *Bronchia*, and hinders the Ingress of Air,



and the same hinders the Circulation thro' the Lungs, and makes the Breath frequent, and afrequent Respiration dries more, and so by the Viscidity of the Phlegm the *Stertor* and *Orthopnea* are produced.

My Observations on this Case are,

1. That this is originally an Inflammation of the Lungs with a Feaver and a viscid Spittle, but this viscid Spittle attends the fizy Blood, and is produced by it; but in ordinary *Asthma's* there is no fizy Blood, no viscid Spittle, 'till the Fit has continued long, and then the Crude Slime thickens by Stagnation, and digests before it is expectorated.

2. He observes this *ταχως ὁ πνευματικὸς γινώσκει*, that is the *Orthopnea* comes suddenly; and in this Case it is produced by feeding before the Viscid Phlegm is evacuated by Spittle, or its Viscidity is digested and spit up; by this Instance, which is fatal in seven days, as *Hippocrates* observed, we ought to be deterred from feeding too much in *Asthma's*, or any difficulties of Breath with Feavers.

3. The *Orthopnea* by an Inflation of the Stomach comes suddenly in the Case mentioned by eating, and it also comes suddenly by bursting the Lungs by coughing, and by a Defluxion the Fits comes suddenly in the Night.

*Hip-*

*Hippocrates* in *Señ.4. Pag. 27.* in his second Book of Diet commends the Juice of ἀγρια μῆλα for the *Orthopnea*, and from hence comes the Use of Verjuice for the *Asthma*; some give it with Toast and Sugar, but I like a Syrrup of it with the half quantity of Sugar, and give two or three Spoonfuls of this with half a pound of Water in a morning. *Hippocrates* says ἐξ αὐτῶν πινόμενα ὠφελεῖ, by which I apprehend, that in his days they made Cyder of them, or at least what we call *Bonnel*, by pounding Apples, and putting Water upon them for ordinary Drink. I am certain that nothing can be more natural, or agree better with hot Bloods and hot Spirits, than Verjuice, which is the best and most natural Acid in our Northern Countries; and I oft advise to hot Tempers a Posco made of Water, half a pound of Verjuice, three Spoonfuls for a Breakfast. I can say by my own Experience, That I find Cyder and Water the best Liquor for the *Asthma*; and that I have used pounded Apples and Water with very good Success to cure the Heat and prevent Effervescencies and Inflations in the *Asthma*; and there is this Benefit of Apple-drinks, that they not only cool, but are great Diuretics, and keep the Body open. A roasted Apple does heat the Water well in the Winter. The Farriers use the Guts of an Urchin for the broken-winded Horses, mixing the Powder

der with their Oats: 'Tis well known that Urchins live on Crabs, and to that the Virtue is owing.

*Hippocrates* also commends Oxymels, and orders the Vinegar to be added to the Water only in such Proportion, that it may be only tasted, for then the Vinegar corrects the Bilious Part in the Honey and its Windiness; it moistens the Mouth, and promotes Urine, and allays Thirst; but if the Oxymel be too sharp it thickens Phlegm, and hinders Expectoration, corrodes the Guts, and purges too much; and in acute Diseases it hinders Perspiration of the natural Vapours, and weakens the natural Heat and Rarifications of Humours, and thereby causes a Coldness in the Extremities. 'Tis not so proper for the Melancholic as the Cholerick, because it ferments the black Choler too much, but it cools the Yellow by Co-agulation; and curing its Bitterness, he gives his Oxymels warm in the Winter, and cold in the Summer. The chief Use of this Oxymels to Asthmatics is keeping the Body cool and lax, being Diuretic and Pulmonic: I can by my own Experience affirm, That I have found great Benefit by these Oxymels as well as Apple-drinks, not much bottled. And from these Reflections of *Hippocrates* on the sharp Oxymels, I cannot but condemn all Acid Spirits as injurious to Perspiration, Expectoration, and the Motion, and Digestion of Humors,



Humors, and their natural Fluidity, unless in great Effervescencies of Humours.

*Hippocrates*, Lib. vii. of the Epidemics, Pap. 307. gives this Case of *Harpalide's* Sister being four or five Months with Child, she had dropfical Swellings of her Legs, and her Eyes were also swelled round about, and the whole habit of the Body like a *Lencophlegmatia*; she had a dry Cough and *Orthopnea*, and Asthmatic Suffocative, as by a Wind, so that she was necessitated to set up in Bed, and not to lie down, but slept sitting; she was for the most part without a Fever, and her Child did not move of a long time, as if it were corrupted. And it fell upon turning; this Asthma lasted two Months, for which she used Beans preserved in Honey, and oft licked of Honey, and by drinking Commin-seed in Wine, she mended, and spit up much digested and white Phlegm, and afterwards brought forth a Girl.

My Observations on this Case are,

1. This was an Asthma with a dropfical habit of Body, as appears by the Swellings; and this observ'd, the Fever joined with it; but the Continuance of the Disease two Months shews that it had something of a Fever in it.

2. This *Orthopnea* was cured by Expectoration of white Phlegm, by the Use of Beans  
and



and Honey, and the Commin-seed was an excellent Diuretic as well as Carminative, or Wind which *Hippocrates* thus expresses, *καὶ πνύγμοι ἐσὶν ὅτε ὑπὸ τῷ πνώματι*, and this I call a rarified Air in the *Serum*.

In the Case above, I have given an Instance of a symptomatic Asthma from viscid Phlegm; but in this from a serous windy Phlegm. The first happens in an Inflammation by sily Blood; this in a serous windy Cachexy, and hydropical Infraction of the Lungs; both these Cases may be oft met with.

In the same Page *Hippocrates* gives a Case of an Asthma with an intermitting Fever.

*Polycrates's* Wife in the Summer about the *Dog-Days* was seiz'd with a Fever, and her difficulty of Breath was less in the Morning, but greater in the Afternoon, and more frequent, a Cough and Spitting were immediately from the beginning like as from an Imposthume; within the *Trachea* was a wheesing Noise, the Face was well colour'd with a Redness in the Cheeks, not very great but florid; in time the Voice becomes hoarse, the Body consumed, and about the Loins there were Eruptions in the Skin (or Pains like a broken Back) and at last the Belly was loose. On the seventieth Day the Fever seiz'd with great Coldness outwards,  
ly,

ly, but in the Temples there was no Pulse after the Fever remitted, but the Breath grew more dense; and after this Intermission the Breath grew more dense, so that she breathed sitting to her Death: There was much rattle in the Wind-pipe, and ill sweats cold, and her looks shew'd that she was sensible and *compos mentis* to the last. The Days on which she was very cold were more than five, and from the first Days she continued spitting purulent Matter.

My Observations are,

1. That this Case was an intermitting Fever; the Breath being more frequent in the Afternoon than the Morning.

2. That this Fever was join'd with a Consumption, as appears by the purulent Spit, Hoarseness and Cough.

3. That this Fever happen'd in the *Dog-Days*, when the Asthma-fits are most violent.

4. That the Fever makes the Respiration dense; but out of the Fit the Respiration was not so.

5. That the Coldness in the Extremity is a usual Symptom in the Asthma, join'd with a Fever; that in the *Orthopnea* they cannot lie down; that if cold Sweats, intermission of Pulse happens and Looseness, there is great danger in an *Orthopnea*.

That

That an Asthma, with an intermitting Fever and purulent Spittle, oft ends in a Consumption; and that this is also a symptomatic Asthma depending on a Fever with Inflammation of the Lungs, and purulent Obstruction.

*Hippocrates*, Lib. vii. Epidemic, Pag. 308. gives an Example of an Asthma with a Quinsy.

An *Uncle* lodging with *Harpalides*, being weak in his Hands and Legs, took a Medicine, which working upwards and downwards very vehemently, and afterwards he was seiz'd with a Fever and Catarrh upon the Trachea, which hindred his Speech, and made that difficult with shortness of Breath, as if he had a Quinsy with Hoarseness. He was choak'd when he swallow'd, and had all other signs of a Quinsy, but that there was no Tumor; the Fever and Cough increas'd, and much and liquid Phlegm were expectorated. In time he had a pain on the Breast, especially on the left Pap, and when he rose or stir'd, the breathing was very short, he sweat much in the Fore-head and Head, and the Quinsy remain'd, but was more remiss as the pain went to the Breast; in the beginning he us'd Beans preserv'd in Honey, but in the Fever hot Oxy-mil and much licking of Honey. All Symptoms ceas'd in 14 days, and he grew stronger in his Hands and Feet.



1. In this Case there was a Fever and Inflammation, and a Catarrh on the Trachea, with a Quinsy at first, and afterwards pains on the Breast, and the Inflammation remov'd from the Muscles of the Wind-Pipe, to those on the Breast; and this Inflammation of these Muscles produc'd the Asthma, difficulty of swallowing and speaking.

2. This Asthma depended also on the Distillation and Phlegm, and was accompanied with sweating on the Head: The Honey and Oxymels helped the expectoration, and the Disease lasted but 14 Days, because it was an Inflammation disturb'd by a strong Purge; 'tis probable, that the *Unctor* had a Rheumatism in his Hands and Legs, and that being unseasonably disordered by a Purge, was thrown on the Neck and Breast; and the Fever not being great, the Inflammation ceased in a small time, and cured the Infirmary in the Hands and Feet, which was probably a Rheumatic Weakness or Pain.

*Lib. 7. of the Epidemics.*

*Theodorus's* Wife was seiz'd with a Fever, bled much at the Nose, and had after-pains on the Sides; after the use of a Fomentation she grew short Breathed, with a wheezing noise. But because this Case is long, I will only mention the chief Symptoms, a Delirium, intermitting Fits, with much Sweat,  
and



and great Coldness; she died Convulsive the 17th day.

1. This was an intermitting Fever, with a great Inflammation on the Side, white Tongue, no Cough.

2. The Fomentation increased the shortness of Breath, and occasioned the Delirium, and at last Convulsions.

3. This Case was as fatal for want of bleeding, as the bleeding at the Nose indicated.

This Fever was accompanied with Sweats, coldness of the Extremities; and the Delirium is always a fatal sign.

*Hippocrates* lib. 7. *Epid.* p. 311. He describes the Son of *Amphiphrades*, taken with a pain of the left side and cough, he had much bilious and watery Stools: The Fever seem'd to cease about the 7th, the Cough continued, he look'd pale and white, on the 12th he spit greenish and white, and as the Disease proceeded his Breath was more dense and asthmatic, and wheezing in the Breast and Wind-Pipe. He used *Sorbiticus*, and was sensible all the time, and died on the 18th, he sweat sometimes.

1. In this Case, the Asthma depended on an Intermitting Fever, and Inflammation  
of

of the Side, and that made the Breath short, asthmatic and wheezing.

*Note,* The Breath is Dense in all Feverish Cases, and the oppression of the *Bronchia* by an Inflammation, give the Asthmatic wheezing.

2. This Fever did not affect the Head because of the Looseness, and that was the Reason that the Person died sensible, though Asthmatic; but if the Fever affect the Head, the Asthmatic have a Delirium and Convulsion: There was no digestion of the Phlegm, but that was green, and run off by Looseness, and for want of Expectoration the Person died.

The Case of *Hermoptolimus* in the same Page is like the former, with a Fever and Inflammation of the Lungs, great Coldness of all the Body; the Stools bilious, the Spittle greenish, the Expectoration was wanting, and he died sensible on the fifteenth Day; more Cases may be there read of the same Nature.

*Hippocrates*, Lib. 7. p. 313. The Son of *Antiphanes*, in the Winter, had a Fever, with a Cough, and pain on the right side, he did eat and walk, being somewhat feverish, ἐδόκει πνευματώδης εἶναι, that is, he seem'd to have a Rupture (in his Lungs). On the 9th the Fever remitted, but did not leave him; the Cough was much and frequent,

quent, and he spit frothy and thick; the Pain on the side continued on the 14th and 20th day, the Fever seem'd to cease, and to come again; the heat was small, and left him after a small time; the Cough was sometimes better, and again worse, with much Suffocation, which afterwards grew better, with much Spittle after some days; but there was a suffocating Cough, and much purulent hot and frothy Spittle were expectorated from the Artery, and in it was much wheesing Noise; the *Asthma* always held him, and his Breath was dense, and he rarely breathed well above the 40th day near the 60th, the left Eye was swelled and made blind without Pain; and not long after the right, and the Pupil looked very white and dry, and not long after this blindness, not above seven days, he dy'd with much Stertor and Delirium. There are many other Cases in the seventh Book of *Epidemics* of *Asthma's* with Fever, but I shall only refer the Reader to them, and make my Observations on this Case.

1. That it was an intermitting Fever with an *Asthma*.

2. That there was a vehement Cough, and confirmed *Asthma*, and great Suffocation, all which burst the Membranes in the Lungs, and by the *ἐνγματούδης Hippocrates* described him, as we say in English, he was broken-winded,



winded, for no other Sense can well be put on those Words. In this Case 'tis certain, that a great and long Cough breaks the wind in Horses, and that Expression was properly taken from an Opinion of the Rupture of the Lungs in an *Asthma*; but to confirm this Opinion, that there is a Rupture in that *Asthma*, I call the windy (but not in the Symptomatic *Asthma*'s before described, viz. in the Dropsy of the Lungs, the *Asthma* depending on Inflammations, Fevers, Quinsie, Consumptions, Pleurifies, Catarrhs). I will describe a Case from *Hippocrates* of an *Asthma* without Fever, which will prove that a breach in the Lungs will make an *Asthma*, Epid. Lib. 6. Pag. 273.

*Agasius*'s Daughter being young, was πνευμονεύματ<sup>ς</sup>, but when she was a Woman, not long after being brought to Bed, was troubled with Pains, (or Rheumatic Pains) and when she had lifted a great Weight, something seem'd to give or crack in her Breast, and the next Day she had the *Asthma*, and the right Hip pained her, and when this pained her, which it did sometimes, she had the *Asthma*; and when this ceased the *Asthma* ceased also, she spit frothy and florrid in the beginning, but when that stopped, it was like a thin choleric Vomit. The Pains troubled her most when she laboured with her Hands.

My Observations on this are,

G g 2

1. That



1. That when she was a Girl, she was thick-breath'd, and at last Asthmatic, by which I observe that *Hippocrates* distinguished betwixt *πικνοπνευματόν*, and the *Asthma*, which has a rare Breath, when without a Fever, which makes the Breath and Pulse frequent. 'Tis probable she was Cachectic, and as such quick-breath'd when a Girl, and that oppression or fulness in the Lungs, disposed her to the breach in the Lungs, by holding her breath in straining.

2. The weight she lifted, did injury to the Lungs, and forced the Exterior Membrane off from the *Bronchia*, which are naturally closed by it. This Rupture was evident by the florrid Spittle; and after this Rupture she was always Asthmatic afterwards, and she had the *Asthma* by Paroxysms as oft as she laboured.

3. She had a Rheumatic Pain after her lying in, and therefore a pain in her Hip accompanied her *Asthma*, and both depended on Exercise, which excited some Effervescence of Humours; and *Hippocrates* forbid all Acrids, as Garlick, strong Flesh-meats, as Swines, Beef, and Sheeps-flesh, because they heat Asthmatics, and rarified their Humours; and he advises, in all difficulties of Breath, to abstain from Clamour, and great Anger, for the first injures the Rupture, and the last moves the Humours too much.

The

The last Case I shall collect from *Hippocrates* is in the 7th Book of *Epidemics*, p. 317. where he gives a Case of a Fever and *Asthma*, *Coma* in *Memnon*; the chief Symptoms were pain in the left side and Cough, and *Asthmatic* wheezing, ἀκρεὰ πῶμλεια ψυχρὰ, the Spittle were crude and white, the πνεύμα ρενχῶδες, and at last a *Coma*: The Urine from the beginning was crude and οποδεδίδες, thin and white, he sweat about the Head and Neck, and not the Breast, the *Hypochondria* were distended.

1. *Note*, There was a looseness in the beginning, which hinder'd Expectoration, as well as a weakness contracted by that and Labour, and the hot time of the Year.

2. Crude Spittle, Sleepiness, coldness of the Extremities, crude Urine, distention of the *Hypochondria*, are dangerous Symptoms in an *Asthmatic-Fever*.

3. It appears that the Lungs were inflamed by the stitch on the side; and that some Expectoration is necessary, as well as frequent bleeding, and the *Cortex* also in all *Asthmatic-Fevers*, by which the intermitting Fever must be stopt.

4. That the Summer *Asthmatic-Fever*, with Looseness, are dangerous.

I observe, if these *Asthmatic-Fevers* are ill treated by Evacuations, they oft end in Cachexies

chexies and Dropfies, and after many Months they kill like an Apoplexy fuddenly. If *Asthmatics* have fizey Blood, and are fubject to Head-achs, they often die Apoplectic, and fome have ftroaks of Palfies; of thefe I could give many Examples.

I once cur'd a Dropfie of the Breaf by violent Vomits and Purges, and *composit. aq. calcis*, bitter Decoction, and Tincture of Steel. I frequently give them juice of Water-creffes, Liver-wort, Plantane expreffed, with *aq. raphani composit.* and mixt Salt of *Creme of Tartar*, *Sal Prunell.* *Sal Tartari.* I order them to drink Cyder, or Wood-drinks, to eat no Suppers, to ufe a fmall Ale brew'd with Broom, dwarf Elder and Daucus Seeds, and ufe dwarf Elder in Thea.

Tho' the Water be evacuated once in a Month, it will gather again; therefore ufe a monthly Vomit, and Purge once in 14 Days by *Merc. Dulc.* and *refin Jalap*, or *Jalap Powder* and fyrup of Buckthorne. Purging Wines I have us'd.

Ufe *aqua calcis composita* in the Winter.

I obferved one of the Dropfies in the Lungs to complain of a Tumour in the Spleen, but Steel did not agree with two Patients I had with thefe Dropfies.

I have obferved thefe Dropfies to fucceed great Colds, in two or three Cafes. Lime-water will not agree with Lean and Chole-  
rick Perfons, but with the Fat, and great  
Drinkers



Drinkers of small Beer. To the Cholerick I give Juices, and mixt Salts, and Cyder, and Wood-drinks, and this may be a general Rule, That no Specifick will succeed, unless it be suitable to the Constitution as well as the Humours which produce the Disease.

I have tapped some, and when some Water is taken out, they make much more by Urine. *Note*, That the Breast ought to be tapp'd very low, betwixt the two or three Ribs, as the Old Writers direct, and not betwixt the 5th or 6th, as the new Practisers, because I found by the first way, the Water was more freely discharged, and if the Breath be held during the Operation, there is no danger of hurting the *Diaphragm*. The Tapping must not be far from the *Sternum*, because the Lungs do sometimes grow to the *Pleura*. They ought to be purged after Tapping in gross Bodies, but in thin ones a *Hectic* rises, and then they must be treated as Consumptive Cases.

I have known some live two or three Years with this Disease, if they use Physick.

*Note*, When the Water fills one side of the Breast, they lie most easie on the contrary; when on both they lie on their Backs. Lying on the same side forces the Water to rise high above the Lungs, and oppresses them more.



No Lixivium agreed with any of my Patients, nor Steel, because a feverishness accompanies these Dropsies.

*Note*, That 'tis a nice thing to distinguish betwixt a Dropsy of the Lungs and an *Asthma*, from an intermitting Fever ill treated; in both there is no spittle, and the Legs at last swell; they are feverish, and thirsty, and hot; the Water at first Amber-colour'd, and moderate in quantity; they eat moderately, they drink much; they have frequent fits of being easier, and then more short-breath'd. Again, by the History of the Diseases they may be distinguished.

I once treated an Hysteric *Asthma* with *Fluor Albus* and *Fluxus Mensium*, by which she became Hydropical, and had sometimes an intermitting Fever (which seems to me the original of the Hysteric *Asthma*). I gave her the *Cortex* and *Laudanum* frequently, which help'd her Fits and palpitation of the Heart, and by use of six drams of *Vitriolum Martis* and burnt Egg-shells made into Pills, by Mucilag. of Gum Tragacanth; but upon the turns of the Year, as the Fever-fits return'd she relaps'd, and dy'd by spitting of Blood; which Symptom, in many Cases, I have observ'd, happens to those who die of Dropsies in the Lungs, and 'tis always a fatal sign of the Death approaching.

The

The Hæctic attended this Case, was often palliated by the *Cortex*, it seem'd to occasion a stroak of the Palsie ; she had a restlessness of Spirits, which nothing but *Laudanum* could Cure.

I have observed that a very long use of Bitters inflames the Blood, and makes the Fits violent, and necessitates the Patient to bleed.

I have observed that divers *Asthmatics* have spit Blood by a long use of hot Pectorals, as Sulph. Balsams, Bitter and Acrid Gums, or Ammoniacum, Myrrh, &c.

Vomiting always relieves the straitness at the pit of the Stomach, and produces a great quantity of Water.

After all Vomitings and Purges in Dropsies of the Breast, prescribe an Opiate.

In an *Asthma* from a *Polypus* there are no windy Bladders in the Lungs, but the Dropsie of the Lungs depend upon a *Polypus*.

The *Cortex*, Bleeding and Vomiting, with Ipecucuanha or Wine of Squills and Oil of Almonds, each ʒss. are necessary Spring and Fall, in all Cases of *Asthma's* with Fevers.

No *Asthma* depending on a Rupture of the Lungs can be cured, but only palliated ; but all the Symptomatic *Asthma's* are curable, as those arising from Fevers, Dropsies, Quinsies, Catarrhs, Convulsions, Inflammations,  
Plu-

Pleurisies, &c. if the Original Diseases can be Cured.

The *Asthma* oft suffocates Infants, and comes suddenly upon holding their Breaths and crying, by which their tender Lungs are over-strained and burst, and then they are incurable: This was my Case, and I have now had it forty Years, the Rupture in my Lungs is only on the right side, and I find no straitness in the Fit; on any other side, and from thence comes the viscid Spittle at the end of my Fits, but I have no Cough nor Phlegm in the Intervals of the Fits. And I have a farther Evidence of my *Asthma* being a Rupture which is the black Spittle like a *Spider's* Web, which is first expectorated after every Fit, for no Spittle is covered with that Black; but the first Spittle upon that going off of the Fit, which usually happens on the first Day towards Night, or on the second Morning. This black Blood comes from the Rupture; and that being but on one Lobe of the Lungs, is the Occasion of the long continuance of such Diseases, without much decay.

These Fits will happen upon very hot, cold, moist, or foggy Weather, if the *Asthmatic* be intemperate.

Those Women who are *Asthmatic* in their Breeding are apt to have their Breasts inexpressible, the Circulation through them being retarded by the *Asthma-fit*.

In



In a Fever very acute an Asthma is dangerous, and with a delirium an Asthma join'd is very dangerous, if the Fever do not intermit.

An *Orthopnea* which happens in some Lethargic Fevers, with rattling of Phlegm, is generally fatal. An unequal intermitting Pulse, cold Sweats, Fainting-fits, and general Weakness are ill signs in Asthma's.

Few Asthmatics dye Consumptive, but the *Orthopnea*, Fevers, *Apoplexy*, *Peripneumonia*, *Lethargy*, *Dropie*, *Cachexy*, kill them; *Blindness*, *Deafness*, *Attrophy*, *Gout*, *Rheumatisms*, *Diarrhea*, *Hoarseness*, Pains of the Head, *Gibbosity* succeed Asthma's.

If the Asthmatic have a Dysury, Looseness, or Ulcers, the Fit is palliated thereby, and when those Evacuations cease the Fits return.

The Dropie of the Breast oft succeeds a *Polypus* in the Lungs, which causes the Extravasation of Serum; and this is produced by long Grief which stops the Circulation.

All Carminatives and hot Pectorals are mischievous in the Fits; the thinnest Diet is then most proper; the Acids agree with Men, and the Choleric best, but with Women and Hypochondriac not so well.

They are most subject to the Spitting Asthma, who have Defluxions from the  
Head,



Head, and the Returns of these Defluxions are the immediate Causes of the Fits of the Asthma, notwithstanding all *Helmont* has writ against it; and the Cure of this Defluxion lies much in Water-drinking, as *Dioscorides* mentions in the Cure of Catarrhs among the *Euporista*, and not in any Chymical Medicines whatsoever. I am well satisfied, that there is more to be found in *Hippocrates's* Writings which will prove beneficial to Asthmatics, than any thing yet writ by the Chymists; no Medicine of theirs yet has cured any Asthma which is habitual; that the Fits are easily cured by Acids, Opiates, and Water-drinking, and cool Laxatives, and Pectorals, and Bleeding; but all Vomits in the Fits are dangerous, and are never to be admitted unless the Stomach be very full of a Surfeit.

Before I conclude this Subject I must confirm what I have writ both by my own Experience and my Patients, who both can assure you that the cold Regimen is the only Method for preventing the Return of the Asthma-fits: The Palliation of that Miserable Disease is done well by the cold Regimen thus.

Every Morning drink a Glass of cold Water, or a Decoction of some cool Plant, as Grass-roots, Dock-roots, Liverwort, Dandelion, or any other Antiscorbutic, or Pectoral, as Gill, Hoarhound, &c. Liquorish-water,

water, or Wood-drinks in the Summer; or mix some acid Juice, Oxymel or Syrup with the Water.

Drink no Tea's or Coffee's in the Morning ordinarily, because they rarifie the Humours and Spirits too much, and disturb them.

The Infusion must be made thus; put one Pound of boiled Water in one Ounce of any of the Pectorals or Carminatives, or Antiscorbutics, or Laxatives. Let them stand all Night, and drink them cool in the Morning.

Eat no Bread at any time except very hungry, because it binds the Body which is injurious to all Asthmatics.

Wash the Head every Morning with the end of the Towel dipt into the Water, and dry it again, or else wet it with a Sponge.

Before Dinner immerse three times in a Cold Bath once or twice in a Week.

At Dinner eat of two or three Dishes without any Gravy, Pickles, or Herbs, or Roots, such as Turneps, Radish, Cabbage, Coleflowers, Pompions, &c. Avoid all strong Wines, Ale, and all Malt-Liquors, all viscid and windy Meats and Drinks; drink Toast and Water, Wine and Water, Cyder and Water, or Mead and Water. Avoid all White Bread, because of its Ferment; use only Brown, with Rye in it, or *Barakeith*, the *Welsh* Bread, made of Oat-meal,

meal, Milk, and Water, and Butter, baked upon a black Stone. Avoid Cheefe, and Milk, Meats, Puddings and Crufts, because of their Vicidity; and Eggs are too hot, as well as Oyfters, Salmon and Salt-fish.

Eat no Supper, but drink in the Afternoon Coffee, Tea, because these help Digestion, and warm the Stomach of all Water-Drinkers. A Glas of Wine and Water, and brown Bread is a good Supper, or any simple Flesh-broth; but all Pottages are fermenting, and beget the Fits. 'Tis scarce possible to do any good without deserting Malt-Liquors, and eating moderate Dinners, and no Supper, and never drinking betwixt Meals.

As to Exercises, it is necessary to walk half an hour before Dinner, and to cool half an hour before eating. In the Morning when the Asthmatic rises let him rub himself with a *Brush* on his Belly and Thighs and Legs and Arms. This I call a revulsive Friction, to draw the *Blood* and *Spirits* towards the Limbs; and once in a Week let some Servant rub the Trunk of the Body and Limbs as a general Friction. This will help the Circulation which the Asthma stops; this will divert the *Spirits* from the Convulsions in the *Precordia*; this will help the Nutrition of the Parts extenuated by frequent Fits; this Friction will excite the *Spirits*, and give a general Vivacity



city to the Asthmatics, who are dull and dispirited after the Fits; but no Friction must be used in the Fit, because it shortens the Breath.

As to Medicines keep the Body open upon the Turns of the Moon by Oxymel *Aloeticum*, or *Scylliticum*, or purging Salt.

Drink the *Steel* or *Bath* Waters in the Summer for Two Months, while young. Use frequently Cold-Baths then, and in the Winter once a Week: For any Stoppage by Phlegm, use Linseed-Oyl in a mixture with Sugar and Syrrups, or this in the Asthma-fits.

Take *Diacodium* two Ounces; *Aqua bryon Comp*, *Oxymel*, *Scylliticum*, *anna* two Ounces, *tinct croci*, two Drams; *Misce capiat Cochleatim*.

What I have here writ upon the Asthma I could confirm by many Hystories of my Patients, who have found Benefit by the Method I have mentioned: But since I have suffered exceedingly by this Disease ever since I was seven Years Old, and now at last after many unsuccessful Tryals of the *Galenist* Methods against Phlegm, and of the Chymical against Convulsions; I have returned to the Judicious Notions and Practice of *Hippocrates*; and from these I have had the greatest Benefit my self, and done much Good to others.

I hope



I hope you will pardon this long Discourse, because 'tis design'd for the Benefit of the Sick, and also for the giving a dew Veneration to Divine *Hippocrates*, who has plainly inform'd us, that a Rupture will produce the Asthma, and that the Juice of wild Apples is a good Medicine for it; that there are many symptomatic Asthma's join'd with Fevers, Quinsies, Dropsies, &c. I have made the best use of this old Notion and Practice, and find it true by my own Experience. If I could have procur'd the Dissection of such Persons as have dy'd of this Disease in my Neighbourhood, you should have had that Evidence too; but my Country-men are averse to such Practices, tho' design'd for their own good. But I must leave this Part of this Subject to the young Practicers in *London*, to look for the Air-Bladders in Asthmatics, before they become Consumptive and Hydropical. Now I have found some Relief, I shall trouble my self no farther with this Subject.

I will only beg you will examine what Dr. *Ridly* has writ p. 153. concerning my Opinion, I publish'd in my Treatise of the Asthma, concerning Respiration in the Epistle to the Reader, who has thus mistaken my Notions, *Per integrum Inspirationes, unius spatium per pulmones Circulationem intermittere asserat*. I only asserted, that a full Inspiration hinders a free admittance of the Blood,  
and

and so does a full Expiration, and that the Circulation thro' the Lungs is more easily perform'd, unless they are in their Motion of Inspiration and Expiration stopt, which is no ways reconcilable to the Doctor's Remarks; and this Assertion is clearly proved by the Experiments mention'd in the Anatomy of the Tortoise by the Academy of *Paris*, where they assert the Necessity of the Motion of the Lungs to help the Circulation of the Blood in Animals, whose Lungs are fleshy, and which are not amphibious. I will mention one of them. An Injection being made by the right Ventricle of the Heart into the Arteries of the Lungs of a dead Dog, it happens that if one make the Lungs rise and sink by the means of Bellows, put into the *Asperæ Arteria*, the Liquor injected by the Heart does easily go thro' the Veins into the left Ventricle, and that when one ceases to blow it passes not, but with great difficulty. This Experiment justifies all I there asserted, which I must leave to your Judgment, as I do all the Parts of this Essay, which contains my Regimen in the Asthma, whereby I can palliate it, and this I give as an Example of the Cold Regimen; and it may be a clear Conviction how many Useful Observations, Notions, and successful Practices may be found in the old Writers, and that ought to excite all our Modern Pens to clear the Ancient Art of Physick from the

Injury of Hypotheses drawn from the general Notions of Philosophy, whether *Aristotelians*, *Cartesian*, *Mechanical*, or *Chymistry*. All false Notions alter the Practice of Physick; therefore we must be very cautious in admitting Romantick, insensible or imaginary Notions, but rather depend on some sensible Alteration both in the solid and fluid Parts of Animals, as the chief Cause of the Disease (if all the other Symptoms can be derived from it). This was *Hippocrates's* Practice, and the Rule ought to be followed by the present Improves of our Faculty, who seems too much addicted to curious Hypotheses; and when we have read them there is very little new relating to Practice, unless some Extravagance which the precarious Hypothesis has introduc'd. Thus *Helmont's* Notion of *Archeus* serves to explain the Asthma, and all Convulsions. *Dr. Willis*, *copula explosivo*, and the Chymist's Tartar, has misled them in Practice, and occasion'd all other Antiasthmatics to be neglected; but such hot Medicines as corresponded with their imaginary Notion. So of old the *Galenists* used only Pectorals against the Asthma's, which they believed to depend on viscid Phlegm. 'Tis an unpardonable Vanity to invent new Notions, when the old want only some farther Explication by the late Discoveries in Anatomy and Philosophy. All the ingenious Men came to the Study of  
Phy-



Phyſick with their Fancies full of Mechanic or Chymical Notions ; with theſe they meaſure all their Physical Notions, and where they diſagree to thoſe Principles, the old Phyſick is rejected ; but I think this is not the natural way, for Phyſick ought to be improved the ſame way as it was invented, by Experience and long Obſervation and frequent Experiments ; and then from theſe ſome obvious Notion of the Diſeaſe muſt be made. 'Tis not poſſible, nor neceſſary, that we ſhould go farther, becauſe we can never diſcover the exact Mechanism of the ſolid Parts, nor the Motions, Changes, and Agitations of the Fluids by our Senſes, tho' very much aſſiſted by the Microſcope. What is diſcourſed on, beſides the Objects of Senſe is no more than probable Conjecture, and is of no Uſe for curing Diſeaſes. I believe moſt Phyſicians who write after their 50th Year, neither write nor read much of the great Hypotheſes, when they come to that Age they grow weary of general Notions, and value only uſeful Things, which are real Hiſtory of Nature, as well as uſeful to the preſerving the Health, or palliating the incurable Miſeries of Mankind. Theſe great Ends I have aim'd at in this Eſſay, by inquiring more fully into the Nature of the Aſthma, and by giving ſome uſeful Hints to all Praſtiſers, who are perplexed by variety of Opinions, and falſe Notions, which have miſ-



led them into hot Medicines, and the hot Regimen.

I must leave all I have writ to your mature Judgment in the Distemper I have treated of. All I pretend to is a Comment upon the old Writers, to follow the Notions and Observations of *Hippocrates*. And I make you this present Dedication of this Essay, because I know you are the best Judge of what I have writ, as well as a kind Friend to,

Sir,

Lichfield, March 25. 1709. *Your very Humble Servant,*

JOHN FLOYER.



*FINIS.*

ot  
.  
r-  
l-  
o-  
s  
e  
,  
e  
d